RECLAMATION

Managing Water in the West

Draft Environmental Assessment

2010 Renewal of Cross Valley Interim Water Service Contracts and Delta/San Felipe Division Contracts through February 29, 2012

EA-09-126

U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South Central California Area Office
Fresno, California

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Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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List of Acronyms and Abbreviations

AEWSD	Arvin Edison Water Storage District
AF	acre-feet (the volume of water one foot deep and an acre in area)
AFY	acre-feet per year
Ag	agricultural
APE	Area of potential effect
BO	Biological Opinion
CDFG	California Department of Fish and Game
CDMWC	Colusa Drain Mutual Water Company
CEC	Categorical Exclusion Checklist
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CSA	County Service Area
CSCO	CVP/SWP coordinated operations
CV Contractor	Cross Valley Contractor
CVC	Cross Valley Canal
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
Delta	Sacramento/San Joaquin Rivers Delta
Devine and Wood	Landowners in both MSWD and WWD that requested the MSWD partial assignment to WWD District #2
DMC	Delta Mendota Canal
DOI	Department of the Interior
DWR	California Department of Water Resources
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FKC	Friant-Kern Canal
FONSI	Finding of No Significant Impact
FWCA	Fish & Wildlife Coordination Act
FWS	Fish and Wildlife Service
HVID	Hill's Valley Irrigation District
IRC	Interim Renewal Contract
ITA	Indian Trust Assets
KTWD	Kern-Tulare Water District
LTRID	Lower Tule River Irrigation District
M&I	Municipal and Industrial
MSWD	Mercy Springs Water District
NEPA	National Environmental Policy Act
NHPS	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Registry of Historic Places
PEIS	Programmatic Environmental Impact Statement
PVWMA	Pajaro Valley Water Management Agency

PWR	Pixley Wildlife Refuge
PXID	Pixley Irrigation District
Reclamation	Bureau of Reclamation
ROD	Record of Decision
ROW	Right-of-Way
SCVWD	Santa Clara Valley Water District
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLC	San Luis Canal
SOD	South of Delta
SRSC	Sacramento River Settlement Contracts
SWP	State Water Project
Three Way Contract	Pajaro Valley Water Management Agency, Westlands Water District (District #1), Santa Clara Valley Water District
TVID	Tri-Valley Water District
WWD	Westlands Water District

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Section 1 Purpose and Need for Action

1.1 Introduction

On October 30, 1992, the President signed into law the Reclamation Projects Authorization and Adjustment Act of 1992 (Public Law 102-575) that included Title 34, the Central Valley Project Improvement Act (CVPIA). In accordance with Section 3404(c) of the CVPIA, the Bureau of Reclamation (Reclamation) proposes to execute nine interim water service contracts beginning March 1, 2010. Interim renewal contracts (IRCs) are undertaken under the authority of the CVPIA to provide a bridge between the expiration of the original long-term water service contract and the execution of a new long-term water service contract. The nine water service contracts proposed for interim renewal in 2010 are listed in Table 2-1. These nine interim contracts would be renewed for a two-year period from March 1, 2010 through February 29, 2012. In the event a new long-term water service contract is executed, the interim water service contract then-in-effect would be superseded by the long-term water service contract and analyzed under a separate process.

Reclamation has prepared this Environmental Assessment (EA) to determine the environmental effect of any actions resulting from the execution of these nine interim contracts for up to two years (March 1, 2010 through February 29, 2012.) Previous interim renewal EAs and supplemental EAs (SEAs) have been prepared and approved as follows:

- the 1994 IRC EA (Reclamation 1994) which covered the contract years 1994 through 1997,
- the 1998 SEA (Reclamation 1998) which covered the contract years 1998 and 1999,
- the 2000 SEA (Reclamation 2000) which covered the contract year 2000,
- the 2001 SEA (Reclamation 2001) which covered the contract year 2001,
- the 2002 SEA (Reclamation 2002) which covered the contract years 2002 and 2003,
- the 2004 SEA (Reclamation 2004) which covered the contract years 2004 and 2005,
- the 2006 SEA (Reclamation 2006) which covered the years 2006 and 2007, and
- the 2008 EA (Reclamation 2008) which covered the years 2008 and 2009

These eight previous documents are incorporated by reference into this analysis.

This 2010 EA will summarize and update, as needed, information from the 2008 EA and the SEAs from 2006, 2004, 2002, 2001 or 2000. The analysis in this 2010 EA and the incorporated EAs and SEAs finds in large part that the interim renewal of the contracts is in essence a continuation of the "status quo," that is, they continue the existing use and allocation of resources (i.e., the same amount of water is being provided to the same lands for existing/ongoing purposes).

Section 3409 of the CVPIA required that Reclamation prepare a programmatic environmental impact statement (PEIS) before renewing long-term Central Valley Project (CVP) water service contracts. The PEIS, completed on October 1999 and hereby incorporated by reference,

analyzed the implementation of all aspects of CVPIA, contract renewal being one of many programs addressed by this Act. CVPIA Section 3404(c) mandated that upon request all CVP existing contracts be renewed. Implementation of other sections of CVPIA mandated actions and programs that require modification of previous contract articles or new contract articles to be inserted into renewed contracts. These programs include water measurement requirements (Section 3405(b)), water pricing actions (Section 3405(d)), and water conservation (Section 3405(e)). The PEIS did not analyze site specific impacts of contract renewal.

The analysis in the PEIS as it relates to the implementation of CVPIA through contract renewal and the environmental impacts of implementation of the PEIS preferred alternative laid the groundwork for this document. The PEIS has analyzed the differences in the environmental conditions between existing contract requirements (signed prior to CVPIA) and the No Action Alternative which is reflective of minimum implementation of CVPIA. This document will focus on the environmental impacts of implementation of the two forms of contracts described in the Alternatives Section.

1.1.1 Background of Long-Term and Interim Renewal Contracts

As stated earlier, Sections 3404(c) and 3409 of the CVPIA stipulate that Reclamation must prepare a PEIS analyzing the direct and indirect impacts and benefits of implementing the CVPIA before renewing long-term CVP water service contracts. The complexity of the analysis associated with the CVPIA PEIS extended its completion until October 1999, with a ROD approved on January 9, 2001.

The PEIS evaluated CVP-wide impacts of long-term contract renewal. As contract renewal negotiations were completed, Reclamation prepared environmental documents that tiered from the PEIS to analyze the local effects of long-term contract renewals at the division, unit, or facility level.

Reclamation completed long-term contract renewal environmental documentation in early 2001 for CVP contracts in the Friant Division, Hidden Unit, and Buchanan Unit of the CVP (Reclamation 2000, 2001b). Twenty-five of the 28 Friant Division long-term contracts were executed between January and February 2001, and the Hidden Unit and Buchanan Unit long-term contracts were executed in February 2001. The Friant Division long-term contracts with the City of Lindsay, Lewis Creek Water District, and City of Fresno were executed in 2005.

A final environmental impact statement (EIS) analyzing effects of the long-term renewal of the Sacramento River Settlement Contracts (SRSC) and the Colusa Drain Mutual Water Company (CDMWC) was completed in December 2004 (Reclamation 2004a). The 147 SRSC were executed in 2005, and the CDMWC contract was executed on May 27, 2005. A revised EA for the long-term renewal of the Feather Water District water-service replacement contract was completed August 15, 2005 and the long-term contract was executed on September 27, 2005 (Reclamation 2005).

Environmental documents were completed by Reclamation in February 2005 for the long-term renewal of CVP contracts in the Shasta Division and Trinity River Divisions (Reclamation 2005b), the Black Butte Unit, Corning Canal Unit, and the Tehama-Colusa Canal Unit of the

Sacramento River Division (Reclamation 2005c). All long-term CVP contracts for the Shasta, Trinity and Sacramento River Divisions were executed between February and May 2005.

Within the Delta Division, Reclamation completed long-term environmental documents for the Delta-Mendota Canal Unit (Reclamation 2005d), U.S. Department of Veteran Affairs (Reclamation 2005e), and the Contra Costa Water District (Reclamation 2005f), and executed 17 Delta Division long-term renewal contracts in early 2005.

Within the American River Division, Reclamation completed long-term environmental documents for the majority of the division. The American River long-term contract renewal EIS ROD was executed for five of the seven contractors (although the American River Division has eight contractors, one is a water rights contract with no expiration and is not part of the contract renewal process). Reclamation has executed contracts with four of the five contractors covered by the ROD. The remaining two not covered by the ROD are still undergoing Endangered Species Act (ESA) consultation and awaiting the completion of a Biological Opinion (BO). The current contracts for the American River Division contractors that have not yet executed a long-term renewal contract expire in 2011. Reclamation is pursuing execution of these remaining long-term water service contract renewals within this interim period (March 1, 2010 to February 29, 2012).

Cross Valley Contractors (CV Contractors) and San Luis Unit long-term environmental documentation and contract renewal is pending. Reclamation is pursuing completion of environmental compliance and execution of these remaining long-term water service contracts within the analysis period of this EA (March 1, 2010 to February 28, 2012).

On March 28, 2007, the San Felipe Unit existing contracts were amended to incorporate some of the CVPIA requirements; however, the long-term renewal contracts for this division were not executed. The San Felipe Unit contracts expire December 31, 2027. Reclamation continues to work on long term contract renewal environmental documentation for the San Felipe Unit as well.

1.2 Purpose and Need

The purpose of the Proposed Action is to execute nine interim contracts to extend the term of the contractors' existing IRC(s) for two years, beginning March 1, 2010 and ending February 29, 2012. Execution of these nine interim contracts is needed to continue delivery of CVP water to these contractors until their new long-term contract can be executed.

IRCs are needed to provide the mechanism for the continued beneficial use of the water developed and managed by the CVP and for the continued reimbursement to the federal government for costs related to the construction and operation of the CVP by the nine contractors. Additionally, CVP water is essential to continue agricultural production and municipal viability for these contractors.

1.3 Scope

This EA has been prepared to examine the impacts on environmental resources as a result of delivering water to nine contractors under the proposed IRCs. The water would be delivered for agricultural or municipal and industrial (M&I) purposes within Reclamation's existing water right place of use. The water would be delivered within the current contractor service area boundaries using existing facilities for a period of up to two years.

1.3.1 Contract Service Areas

No changes to any contractor's service area are part of the Proposed Action. However, Reclamation completed a boundary modification for the County of Fresno to include a previously graded tract (Tract 4870) into the service area so that development could commence. The NEPA analysis was done as a separate action (EA-07-132). Any request by an interim contractor to change its existing service area would be a separate federal action. Separate appropriate environmental compliance and documentation would be completed before Reclamation approves a land inclusion or exclusion to any CVP contractor's service area.

1.3.2 Purpose of Water Use

Use of contract water for agricultural irrigation use or M&I use under the proposed IRCs would not change from the purpose of use specified in the existing contracts. However, the amount and types of crops planted would vary according to the annual water allocation and farming practices, and a small quantity of irrigation use may be changed to M&I purposes where the existing contract and governing laws and regulations allow.

1.4 Potential Issues

Consistent with previous CVP IRC EAs including the *1994 Interim Renewal Contracts* EA for 67 contractors and the 1998, 2000, 2002, 2004, 2006 supplemental EAs, and 2008 EA, this 2010 EA considers the potential effects of these nine interim renewal contracts on the following resources:

- Water Resources
    - Surface Water
    - Groundwater
- Land Use
- Biological Resources
- Cultural Resources
- Indian Trust Assets
- Socioeconomic Resources
- Environmental Justice
- Global Climate Change
- Cumulative Impacts

Section 2 Alternatives Including the Proposed Action

For purposes of this EA, the following assumptions are made under each alternative:

A. Execution of each interim renewal contract is considered to be a separate action;
B. A two year interim renewal period is considered in the analysis, though contracts may be renewed for a shorter period;
C. The contracts would be renewed with existing contract quantities as reflected in Table 2-1 below;
D. Reclamation would continue to comply with commitments made or requirements imposed by applicable environmental documents, such as existing biological opinions (BOs) including any obligations imposed on Reclamation resulting from reconsultations; and
E. Reclamation would implement its obligations resulting from Court Orders issued in actions challenging applicable BOs that take effect during the interim renewal period.

Table 2-1 Central Valley Project 2010 Interim Renewal Contractors

CVP Contractor	Contract Quantity (A/F)	Contract Purpose of Use	Water Shortage Reliability	Existing IRC Contract No.	Contract Expiration Date	2010 IRC Contract No.
DELTA/SAN FELIPE DIVISION						
Pajaro Valley Water Management Agency (PVWMA), Westlands Water District (District #1), Santa Clara Valley Water District *(3-way assignment final 14 May 99)*	6,260	Ag/M&I	Ag	14-06-200-3365A-IR12-B (SCV) (3-way assignment from MSWD: see Reclamation 1999 and 2004c)	2/29/2012	14-06-200-3365A-IR10-B (3-way assignment from MSWD: see Reclamation 1999 and 2004c)
CROSS VALLEY CONTRACTORS						
Fresno, County of	3,000	Ag/M&I	Ag	14-06-200-8292A-IR12	2/29/2012	14-06-200-8292A-IR13
Hills Valley Irrigation District	3,346	Ag/M&I	Ag	14-06-200-8466A-IR12	2/29/2012	14-06-200-8466A-IR13
Kern-Tulare Water District*	40,000	Ag/M&I	Ag	14-06-200-8601A-IR12	2/29/2012	14-06-200-8601A-IR13
Lower Tule River Irrigation District	31,102	Ag/M&I	Ag	14-06-200-8237A-IR12	2/29/2012	14-06-200-8237A-IR13
Pixley Irrigation District	31,102	Ag/M&I	Ag	14-06-200-8238A-IR12	2/29/2012	14-06-200-8238A-IR13
Kern-Tulare Water District (Rag Gulch Water District*)	13,300	Ag/M&I	Ag	14-06-200-8367A-IR12	2/29/2012	14-06-200-8367A-IR13
Tri-Valley Water District	1,142	Ag/M&I	Ag	14-06-200-8565A-IR12	2/29/2012	14-06-200-8565A-IR13
Tulare, County of	5,308	Ag/M&I	Ag	14-06-200-8293A-IR12	2/29/2012	14-06-200-8293A-IR13
Total	**134,560**					

*KTWD and Rag Gulch Water District have consolidated their two districts into one district, under KTWD's name through a contract assignment of Rag Gulch Water District's IRC to KTWD. However, KTWD would be issued two IRC's – one as KTWD IRC (for 40,000 AF), and one as Rag Gulch Water District's assigned IRC (for 13,300 AF). As part of that assignment, KTWD has committed to maintain the effective separation of the two districts in terms of how much water is delivered and applied where, until the long-term water service contracts are negotiated and appropriate environmental compliance is complete.

2.1 Alternative A: No Action

The No Action Alternative evaluated in this document is the execution of up to nine interim renewal water service contracts between the United States and the CVP contractors listed in Table 2-1 with terms and conditions modeled after the Preferred Alternative of the CVPIA PEIS (Reclamation and FWS 1999) adapted to apply for an interim period. Therefore, the No Action Alternative is the continued delivery of CVP water under the IRCs which includes terms and conditions required by non-discretionary CVPIA provisions for long-term contracts.

The CVPIA PEIS Preferred Alternative assumed that most contract provisions would be similar to many of the provisions in the 1997 CVP IRCs, which included contract terms and conditions consistent with applicable CVPIA requirements. The only CVPIA provision which was incorporated into the Preferred Alternative of the Final PEIS and included in the No Action Alternative but has not been incorporated into the previous IRCs for the nine contractors is tiered water pricing.

The CVPIA required the implementation of a tiered water pricing component for contracts with terms longer than three years. The tiered pricing component is the incremental amount to be paid for each AF of water delivered, and includes charges for water that would be collected and paid into the Restoration Fund. The tiered pricing component for the amount of water delivered up to 80 percent of the contract total shall not be less than the established rates/charges determined annually by the Contracting Officer in accordance with the then-current applicable Reclamation water rate-setting policies for the contractor. The tiered pricing component for the amount of water delivered in excess of 80 percent of the contract total, but less than or equal to 90 percent of the contract total, shall equal one-half of the difference between the rate/charges established for the contractor and the M&I full cost rate. The tiered pricing component for the amount of water that exceeds 90 percent of the contract total shall equal the difference between (1) the rates/charges and (2) the applicable cost water rate. This is the described as the 80/10/10 pricing structure (80/10/10).

2.2 Alternative B: Proposed Action

The Proposed Action alternative evaluated in this document is the execution of up to nine interim renewal water service contracts between the United States and the CVP contractors listed in Table 2-1. These contracts are the same nine included in the No Action Alternative. The existing IRCs listed on Table 2-1 expire February 28, 2010. All of these nine contracts have existing IRCs and all have had several IRCs executed prior to their existing IRC. The CV Contractors are currently in their twelfth IRC and the proposed renewal would be the thirteenth. The Proposed Action would continue these existing IRCs, with only minor, administrative changes to the contract provisions to update the previous IRCs for the new contract period. In the event that a new long-term water contract is executed, that IRC would then expire.

No changes to any of the nine CVP contractor service areas or water deliveries are part of the Proposed Action. CVP water deliveries under the nine proposed IRCs can only be used within each designated contract service area (see Appendix B for service area maps). Contract service

areas for the proposed IRCs have not changed from the existing IRCs except in the case of the County of Fresno (See Section 1.3.1 above for further explanation).

The proposed 2010 IRC quantities (see Table 2-1) remain the same as in the existing IRCs. Water can be delivered under the IRCs in quantities up to the contract total, although it is likely that deliveries would be less than the contract total. The existing interim contracts executed in 2008 can be viewed on-line at www.usbr.gov/mp/cvpia/3404c/lt_contracts/index.html. A sample proposed 2010 IRC is provided in Appendix C of this document. The terms and conditions of the 2010 IRCs are incorporated by reference into the Proposed Action.

2.2.1 Comparison of Alternatives

The primary difference between the Proposed Action and the No Action Alternative is that the Proposed Action does not include tiered pricing. Section 3405(d) of the CVPIA does not require tiered pricing to be included in contracts of three years or less in duration. Therefore, if during the term of the IRCs at least 80 percent of the contract total is delivered in any year, no incremental charges for water will be collected and paid to the Restoration Fund that year as would have happened under tiered pricing.

As in the No Action Alternative Reclamation would continue to comply with commitments made or requirements imposed by applicable environmental documents, such as existing BOs including any obligations imposed on Reclamation resulting from reconsultations; and Reclamation would implement its obligations resulting from Court Orders issued in actions challenging applicable BOs that take effect during the interim renewal period.

Table 2-2 below provides a comparison of the differences between the No Action Alternative and the Proposed Action as they related to many of the construction clauses.

Table 2-2 Comparison of Contract Provisions

IRC Provision Definitions:	No Action Alternative Based on PEIS Preferred Alternative	Proposed Action – Negotiated Contract
Category 1 and Category 2	Tiered Pricing as in PEIS	No Tiered Pricing and No definition of Category 1 and Category 2
Contract Total	Contract Total described as Total Contract	Assumes maximum entitlement
M&I water	Not addressed as definition – Addressed within an article – Article assumes obtaining a rate for M&I when delivered	Assumes provision of water for irrigation of land in units less than or equal to five acres as M&I water unless Contracting Officer is satisfied use is irrigation
Terms of contract – right to use contract	Assumes that contracts may be renewed	Assumes that contracts will be renewed if Contractor has been compliant with contract
	Assumes convertibility of contract to a 9(d) contract same as existing contracts	Similar to No Action Alternative but preserves positions re: convertibility to 9(d) contract
Water to be made available and delivered to the contractor	Assumes water availability in accordance with existing conditions	Similar to No Action Alternative but makes it more explicit that water to be made available is subject to operational constraints

IRC Provision	No Action Alternative Based on PEIS Preferred Alternative	Proposed Action – Negotiated Contract
	Assumes compliance with BOs and other environmental documents for contracting	Similar to No Action Alternative; Requires contractor to be within legal authority to implement.
Rates and method of payment for water	Assumes Tiered Pricing is total water quantity; assumes advanced payment for rates for two months; payment only for water taken	Same as No Action Alternative in terms of payment and take or pay, however tiered pricing is not applicable to contracts less than 3 years
Application of payments and adjustments	Assumes credits or refunds	Similar to No Action Alternative except requires $1,000 or greater overpayment for refund
Opinions and determinations	PEIS recognizes that CVP will operate in accordance with existing rules; opinions will not be arbitrary, capricious or unreasonable	Same as No Action Alternative with additional clarifications on the right to seek relief and legal effect of section
Coordination and cooperation	Not addressed	Assumes that communication, coordination and cooperation between CVP operations and users should participate in CVP operational decision making discussions; however, parties retain exclusive decision-making authority
Operation and maintenance by non-federal entity	Assumes that CVP will operate in accordance with existing rules and no additional changes to operation responsibilities	Similar to No Action Alternative; however, recognizes role of certain operating Non-Federal Entity/Entities
Resolution of disputes	Not addressed	Assumes a Dispute Resolution Process
Changes in contractor's service area	Assumes no change in CVP water service areas absent Contracting Officer consent	Assumes changes to limit rationale used for non-consent and sets time limit for assumed consent.
Confirmation of contract	Assumes Court confirmation of contract for assurance relating to validity of contract	No requirement for court confirmation of contract on contracts of short duration

Note: Table 2-2 contains a summary of many but not all of the terms and conditions of the referenced contracts. The above table is also generally descriptive of contract provisions within the predominantly irrigation contract forms; however, for the precise contract language and an exact comparison, the specific contracts should be referenced.

As previously mentioned, KTWD and Rag Gulch Water District have consolidated their two districts into one, under KTWD's name, through a contract assignment of Rag Gulch Water District's IRC to KTWD. As part of that assignment, KTWD has committed to maintain the effective separation of the two districts in terms of how much water would be delivered and applied where, until the long-term water service contracts are negotiated and appropriate environmental compliance is complete. That is, the water that would be delivered to KTWD under the KTWD IRC would only be applied to lands within the historic KTWD contract service area boundaries, and water that would be delivered to KTWD under the Rag Gulch Water District IRC would only be applied to lands within the historic Rag Gulch Water District service area boundaries. No service area boundaries would be changed as a result of the Proposed Action.

2.3 Alternatives Considered by Eliminated from Detailed Analysis

2.3.1 Nonrenewal of Interim Contracts

Non-renewal of existing contracts is considered infeasible based on Section 3404(c) of the CVPIA, which states that "…the Secretary shall, upon request, renew any existing long-term repayment of water service contract for the delivery of water from the CVP….". The non-renewal alternative was considered, but eliminated from analysis in this 2010 EA because Reclamation has no discretion not to renew existing water service contracts.

2.3.2 Reduction in Interim Contract Quantities

Reduction of contract water quantities due to the current delivery constraints on the CVP system was considered in certain cases, but rejected from the analysis of the nine interim renewal contracts for several reasons:

First, the Reclamation Project Act of 1956 and the Reclamation Project Act of 1963 mandate renewal of existing contract quantities when beneficially used. Irrigation and M&I uses are beneficial uses recognized under federal Reclamation and California law. Reclamation has determined that the contractors have complied with contract terms and the requirements of applicable law. It also has performed water needs assessments for all the CVP contractors to identify the amount of water that could be beneficially used by each water service contractor. In the case of each IRC contractor, the contractor's water needs equaled or exceeded the current total contract quantity.

Second, the analysis of the PEIS resulted in selection of a Preferred Alternative that required contract renewal for the full contract quantities and took into account the balancing requirements of CVPIA (p. 25, PEIS ROD). The PEIS ROD acknowledged that contract quantities would remain the same while deliveries are expected to be reduced in order to implement the fish, wildlife, and habitat restoration goals of the Act, until actions under CVPIA 3408(j) to restore CVP yield are implemented (PEIS ROD, pages 26-27). Therefore, an alternative reducing contract quantities would not be consistent with the PEIS ROD and the balancing requirements of CVPIA.

Third, the shortage provision of the water service contract provides Reclamation with a mechanism for annual adjustments in contract supplies. The provision protects Reclamation from liability from the shortages in water allocations that exist due to drought, other physical constraints, and actions taken to meet legal or regulatory requirements. Reclamation has relied on the shortage provisions to reduce contract allocations to IRC contractors in most years in order to comply with Section 3406(b)(2) of the CVPIA. Further, CVP operations and contract implementation, including determination of water available for delivery, is subject to the requirements of BOs issued under the Federal ESA for those purposes. If contractual shortages result because of such requirements, the Contracting Officer has imposed them without liability under the contracts.

Fourth, retaining the full historic water quantities under contract provides the contractors with assurance the water will be made available in wetter years and is necessary to support investments for local storage, water conservation improvements and capital repairs.

Therefore, an alternative reducing contract quantities would not be consistent with Reclamation law or the PEIS ROD, would be unnecessary to achieve the balancing requirements of CVPIA or to implement actions or measure that benefit fish and wildlife, and could impede efficient water use planning in those years when full contract quantities can be delivered.

Section 3 Affected Environment and Environmental Consequences

This section describes the service area for the nine contractors analyzed in this EA. The study area, shown in Figure 3.1, includes portions of San Joaquin, Fresno, Kings, Santa Clara, Tulare, and Kern Counties. Specifically, the study area includes the CVP service areas of the following nine contractors:

- Pajaro Valley Water Management Agency, Westlands Water District (DD #1), Santa Clara Valley Water District Three-Way Contract (Previous Assignment from Mercy Springs Water District)
- County of Fresno
- County of Tulare
- Hills Valley Irrigation District
- Kern-Tulare Water District
- Lower Tule River Irrigation District
- Pixley Irrigation District
- Tri-Valley Water District
- Rag Gulch Water District

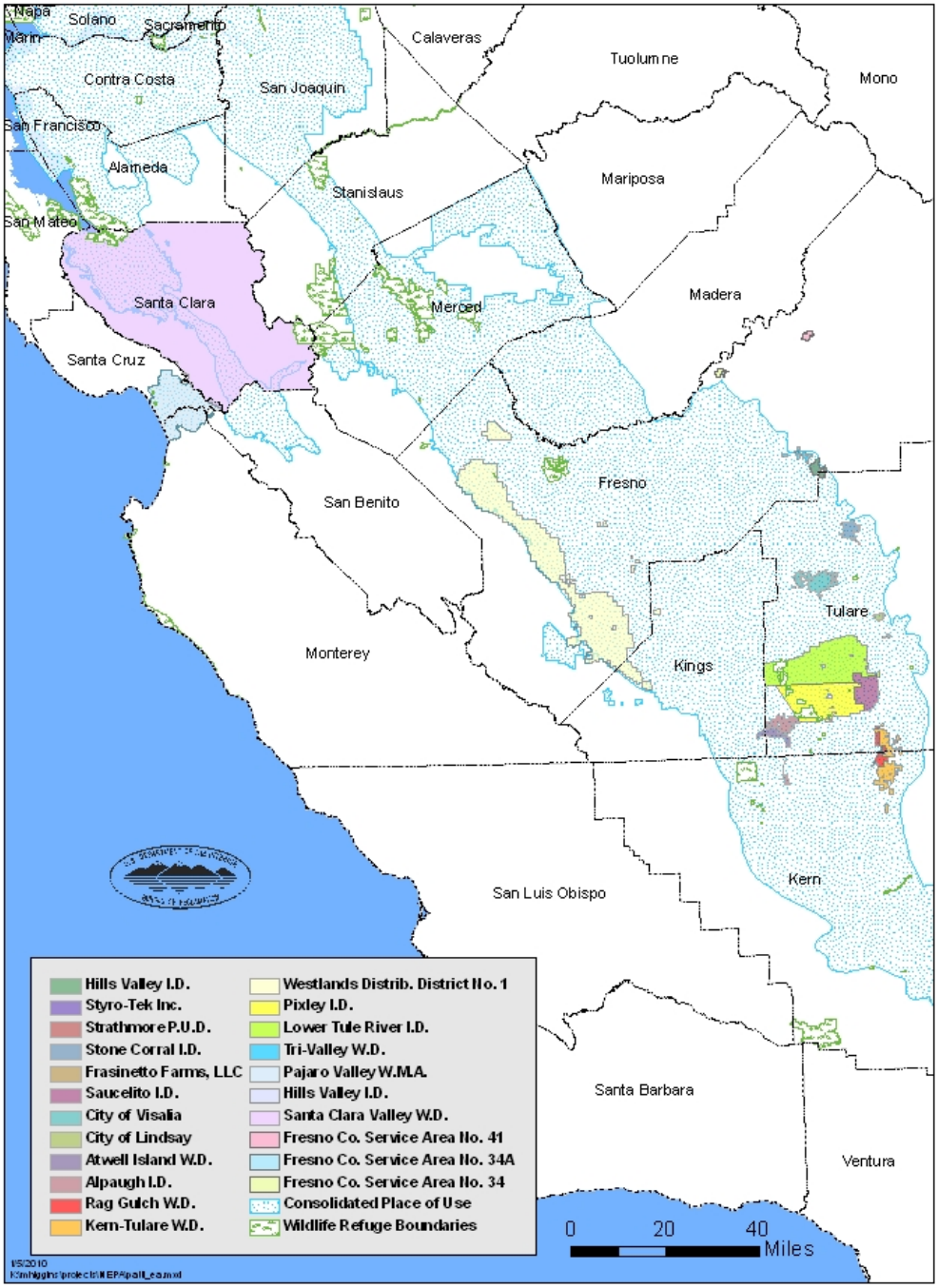

Figure 3-1 Contractors Service Area Boundaries

Maps of individual Contractor service area boundaries can be found in Appendix B.

For ease of discussion in this document, the analysis will be addressed in groups of contracts related to an entity. For example, the potential effects to Santa Clara Valley Water District (SCVWD) will be evaluated as part of the PVWMA, Westlands Water District (WWD) Distribution District #1 (DD #1), SCVWD Three-way Contract and the CV Contractors will be looked at mainly as a group since, for the most part, their districts have many similarities. For those aspects that are unique and are affected differently by the Proposed Action, the CV Contractors will be discussed individually.

3.1 Water Resources

3.1.1 Affected Environment

Surface Water Resources

Central Valley Project Water Supply CVP water is used for the irrigation of agricultural areas, for M&I uses, for the restoration of fisheries and aquatic habitat in waterways that have been affected by water development, for wildlife refuges, and for other purposes. The largest use of CVP water is for agricultural irrigation. The greatest demand for irrigation water occurs in mid- to late summer, as crops mature and crop water use increases. During the winter, farmers also use water for frost control and pre-irrigation of fields to saturate the upper soil as well as for irrigation of permanent crops.

Reclamation makes CVP water available to contractors for reasonable and beneficial uses, but this water is generally insufficient to meet all of the contractors' needs. In the IRC contractor's service areas, contractors without a sufficient CVP water supply may extract groundwater if pumping is feasible or negotiate water transfers with other contractors. Alternative supplies from groundwater pumping and/or transfers are accessed as supply sources when CVP surface water deliveries become more expensive than pumping or transfer costs.

Water Delivery Criteria Reclamation's delivery of CVP water diverted from rivers is determined by state water right permits, judicial decisions, and state and federal obligations to maintain water quality, enhance environmental conditions, and prevent flooding. The CVPIA PEIS considered the effects of those obligations on CVP contractual water deliveries on a CVP-wide basis. Experience since completion of the CVPIA PEIS has indicated even more severe contractual shortages are applicable to SOD water deliveries than predicted (Reclamation and FWS 1999), and this information has been incorporated into the modeling for the current CVP/SWP coordinated operations [CSCO] (Reclamation and DWR 2004).

Water Delivery Conditions Under CVPIA Implementation With the implementation of the CVPIA PEIS Preferred Alternative and under conditions in the late 1990s, modeling predicts that CVP agricultural SOD water service contractors would receive an average of 59 percent of their current total contract amounts, based upon a hydrologic pattern similar to that of the last 70 years and described in Technical Appendix, Volume 2, of the Draft CVPIA PEIS (Reclamation 1997a). These conditions would result in the delivery of total contract amounts to agricultural

water service contractors located SOD approximately 15 percent of the time. Minimum deliveries of zero would occur only in critically dry years.

Tables within the CSCO (Reclamation 2004b) also show that deliveries of over 80 percent of the contract total for agricultural purposes would occur between 22 and 24 percent of the time (See Figure 3.2). Therefore, modeling predicts that tiered pricing, if it were required, would apply once every fourth or fifth year.

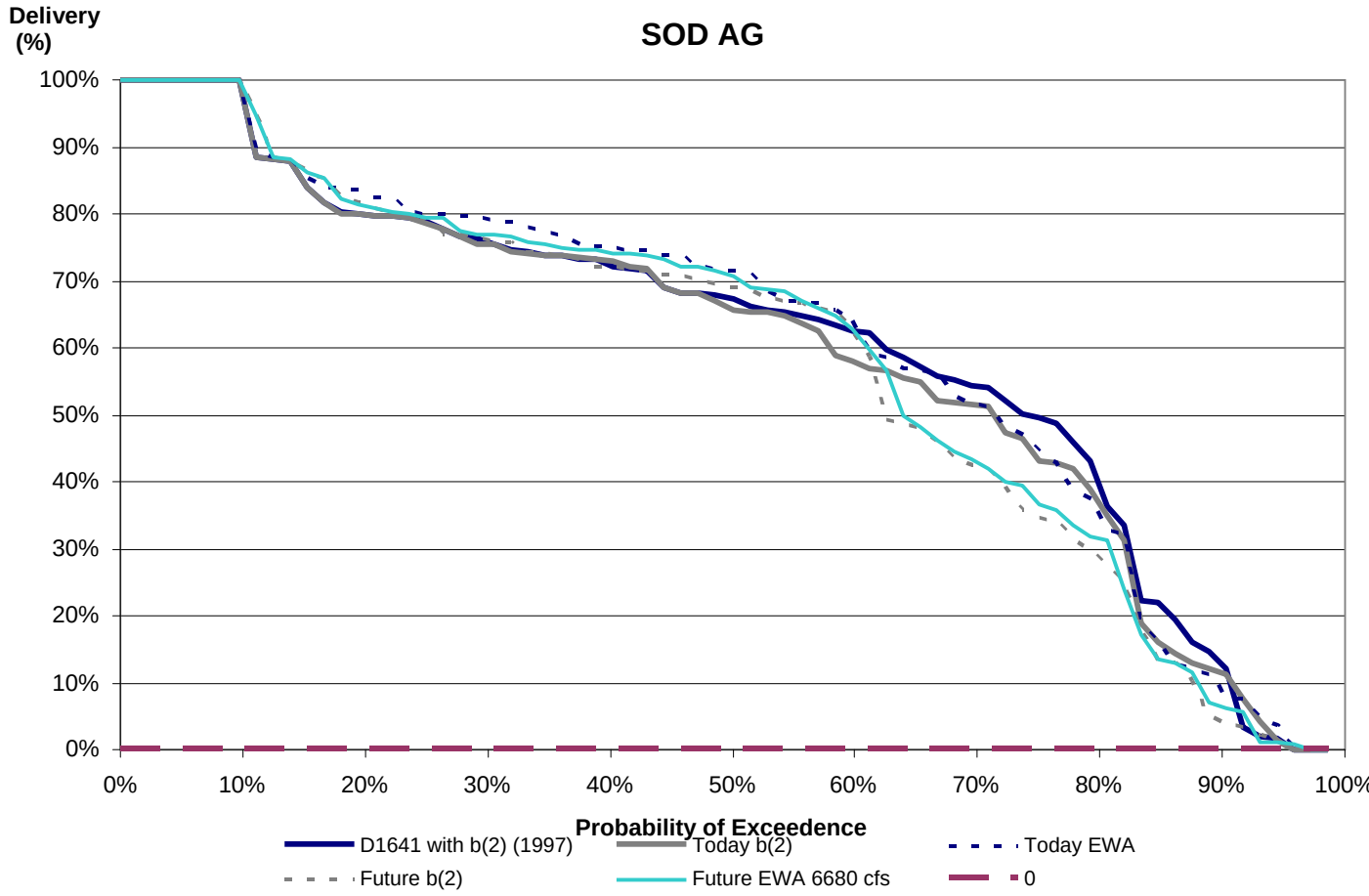

Figure 3-2 CVP SOD Agricultural Allocation Exceedance Chart
Source: Reclamation 2004b.

Contractor Water Needs Assessments Demands were compared to available non-CVP water supplies to determine the need for CVP water. If the negative amount (unmet demand) is within 10 percent of their total supply for contracts of greater than 15,000 acre-feet (AF) per year (AFY), or within 25 percent for contracts less than or equal to 15,000 AFY, the test of full future need of the water supplies under the contract was deemed to be met. Because the CVP was initially established as a supplemental water supply for areas with inadequate supplies, the needs for most contractors were at least equal to the CVP water service contract and frequently exceeded the previous contract amount. Increased total contract amounts were not included in the needs assessment because the CVPIA stated that Reclamation cannot increase contract

supply quantities. The analysis for the Water Needs Assessment did not consider that the CVP's ability to deliver CVP water has been constrained in recent years and may be constrained in the future because of many factors including hydrologic conditions and implementation of federal and state laws. The likelihood of contractors actually receiving the full contract amount in any given year is uncertain. No new water needs assessments are anticipated.

Table 3-1 IRC Contractor Water Needs Assessments

Contractor	2025 Projected Unmet Demand (af)
WWD	74,287
SCVWD	156,874
Lower Tule River ID	23,318
Pixley ID	112,507
Hill's Valley ID	3,092
KTWD	7,517
Tri-Valley WD	Data not available
County of Fresno	1,122
County of Tulare	Data not available

Westlands Water Water Use WWD's current contract is for 1,150,000 AF of CVP supply from the SLC and DMC. The district also receives an additional source of CVP water via assignments for approximately 36,490 AF. In addition to these CVP supplies, approximately 200,000 AF of water is pumped from the underground aquifers during wet years. The district supplies groundwater to some district farmers and owns some groundwater wells, with the remaining wells privately owned by water users in the district. Other water supply sources in the district include flood flows from the Kings River, which are available periodically and diverted from the Mendota Pool (Reclamation 2007).

WWD's annual contract amount is subject to shortages caused by drought, legislative, environmental, and regulatory actions such as the CVPIA, the ESA, and San Francisco Bay/San Joaquin-Sacramento River Delta (Delta) water quality actions. WWD receives the majority of its CVP water supply via the SLC.

WWD has executed three full or partial CVP contract assignments from DMC contractors to DD#1 over the last decade. WWD requested and received approval from Reclamation on the contract assignments of 27,000 AFY from Broadview Water District (Contract Number14-06-200-8092-IR8), 2,990 AFY from Widren (Contract Number 14-06-200-8018-1R7), and 2,500 AFY from Centinella Water District [Contract Number 7-07-20-W0055] (Reclamation 2006, 2005b, 2004b). The environmental effects of issuing interim renewal contracts for these previous contract assignments was previously analyzed under EA-07-75, and it was determined that there was no adverse effect, and are incorporated by reference (Reclamation 2007a). Additionally, on March 1, 2003, Reclamation approved a partial contract assignment of 4,198 AFY from MSWD (Contract Number 14-06-200-3365A) to WWD DD#2 (Reclamation 2002a). The interim renewal of this contract assignment to WWD DD2 is also part of EA-07-75 (Reclamation 2007a).

WWD CVP Water Supplies In 1999, Reclamation stated that the estimated average long-term supply for WWD was 70 percent of its water supply contract, or about 805,000 AFY (approximately 70 percent of the contract total). Prior to 1990, WWD's average CVP water

supply, including interim CVP water when it was available, was approximately 1,250,000 AFY. The total maximum additional water supply provided from the four assignments to WWD is 32,490 AF. The likely long-term average deliveries for this assigned water is 22,743 AFY (as above, this is approximately 70 percent of the contract total). Therefore, current average long-term CVP water supply deliveries of 827,743 AFY to WWD are still below the average deliveries prior to 1990.

WWD has an on-going program to purchase and transfer supplemental water from other sources that would allow a better determination of the water supply sooner in the water year. Average total demand for WWD is approximately 1,394,000 AFY. With its annual CVP contract entitlement of 1,150,000 AFY, and an annual safe yield available from groundwater pumping of approximately 135,000 to 200,000 AFY, the total water supply available from a full CVP contract supply and from groundwater is still less than the total water need. With future CVP water deliveries estimated at 60-70 percent of the contract amount or less, WWD and individual landowners must obtain supplemental water to help make up this deficiency.

Three-Way Contract Prior to 1999, MSWD was entitled to up to 13,300 AFY of CVP water pursuant to Contract Number 14-06-200-3365A. In 1999, MSWD assigned 6,260 AFY of its CVP Water Service Contract jointly to PVWMA, SCVWD, and WWD Distribution District No. 1 (DD1) (Contract No. 14-06-200-3365A-IR2).

The final EA and FONSI, *CVP Water Supply Partial Contract Assignment from Mercy Springs Water District (Contract No. 14-06-200-3365A) to Pajaro Valley Water Management Area, Santa Clara Valley Water District, and Westlands Water District*, signed April 12, 1999 (1999 EA), supported the partial assignment of 6,260 AFY from MSWD to PVWMA, WWD DD1, and SCVWD, assessed (1) the impact of the removal of this existing surface water supply (and the entire 13,300 AFY supply) from MSWD and (2) the impact of delivering 6,260 AFY to SCVWD and WWD DD1 under the terms and conditions of the then existing MSWD CVP contract and Related Agreement. This environmental document is hereby incorporated by reference.

Generally, the Related Agreement allows SCVWD and WWD DD1 to take delivery of the water on an interim basis until PVWMA is ready to take delivery of the CVP water for beneficial use in its service area. Conveyance facilities to transport the CVP water to PVWMA have not been constructed. The PVWMA will not be able to take delivery of CVP water under Contract No 14-06-200-3365A unless or until the proposed pipeline or other conveyance mechanism is in place for PVWMA to physically receive this water. Since it is highly unlikely that PVWMA will have the ability to take CVP water during the two-year IRC period there will be no analysis of water deliveries to PVWMA within this 2010 EA (as discussed in the Scoping).

Santa Clara Valley Water District Water Use The SCVWD is a water supply wholesaler who conserves, imports, treats, distributes, and is responsible for the quality of water within Santa Clara County. SCVWD provides wholesale water service to 13 retail agencies serving Santa Clara County. SCVWD also provides water directly to the agricultural community and to supplement groundwater.

SCVWD's water supply consists of two primary sources: local supplies and imported water. Local supplies include captured surface runoff, groundwater, and recycled water. Imported supplies are from the SWP, CVP, and Hetch-Hetchy (City of San Francisco). Most imported water comes to SCVWD from the Sierra Nevada Mountains via the Delta and is delivered by the CVP and SWP.

SCVWD has two contracts for water delivery from the CVP. The first CVP contract was executed in 1977 for 152,500 AFY. SCVWD's annual contract amount is subject to shortages caused by drought and environmental and regulatory actions such as the CVPIA, the ESA, and Bay/Delta water quality actions. The second contract, executed in 1999, is Contract Number 14-06-3365A-IR3-B the partial assignment from MSWD which was discussed above and is one of the IRCs analyzed in this EA. SCVWD imports CVP deliveries via the San Felipe Division of the CVP which originate from Delta water stored in the San Luis Reservoir in Merced County and delivered to the Coyote Creek Pump Station west of Anderson Reservoir via a series of pipelines and tunnels.

SCVWD has a contract with the California Department of Water Resources (DWR) for 100,000 AFY from the SWP. Water is delivered via the Banks pumping plant in the southern Delta and the South Bay Aqueduct delivers the water to a terminal tank at the Penitencia Water Treatment Plant in east San Jose.

SCVWD operates 10 local reservoirs, the largest one being Anderson Reservoir with a maximum storage of approximately 89,000 AF. SCVWD also operates a comprehensive groundwater management program, including onstream and offstream recharge facilities and extensive monitoring. SCVWD manages pumping demands on the groundwater basin indirectly through its contract and non-contract water rates with retail water agencies.

SCVWD has established rights to 35 percent of the existing Semitropic Groundwater Banking Program in Kern County which is used to offset shortfalls in annual water supplies. The agreement reserves for SCVWD up to 350,000 AF of storage, and improves SCVWD's supply reliability by enabling storage of wet-year water for use during future dry years. Reclamation has approved the deliver of up to 100,000 AFY of CVP supplies to be banked in Semitropic for 21 years through the year 2027. Reclamation prepared EA/FONSI 05-126 *Santa Clara Valley Water District Long-Term Groundwater Banking Project Storage and Exchange of CVP water with Semitropic Water Storage District* analyzing this approval and is hereby incorporated by reference. The FONSI was signed on April 18, 2006.

Total annual water use in Santa Clara County is currently estimated to be 400,000 AF. Approximately 10 percent of this is for agricultural purposes. Most of the remaining use is for M&I purposes, which includes residential, commercial, industrial, and institutional water use. Water is also used to meet environmental needs, such as maintenance of minimum stream flows to meet fishery needs.

Cross Valley Contractors Contractual Water Supplies The eight CV Contractors' CVP IRCs entitle these contractors to an annual delivery of up to 128,300 AFY of water (see CV Contractor's water use below). Unlike the other IRC analyzed in this EA, the IRCs for these

eights contractors are three party contracts. In these three-party contracts Reclamation provides the water supply in the Delta and DWR pumps the water from the Delta and conveys the water to the Cross Valley Canal (CVC). Similar to other SOD contractors, CV Contractors are limited in their water allocation south of the Delta by the ability to convey the water south of the Delta. CV Contractors' supplies are conveyed through the California Aqueduct to Tupman by DWR.

The CV Contractors' service area receives water from the CVP, other surface water sources, and groundwater pumped from on-farm sources. In 1987, total farm deliveries of water amounted to 273,631 AF. On-farm groundwater contributed 82 percent (224,309 AF) of the CV Contractor's total farm deliveries. Surface water supplied from the CVP totaled 64,320 AF, but combined with non-CVP surface water (2,048 AF) and taking losses of 17,046 AF into consideration, the total net surface water delivered to the CV Contractors was 49,322 AF.

Cross Valley Contractor "In Delta Allocation" Reclamation has determined that the CV Contractors' IRCs allow the difference between the SOD allocation and the amount Reclamation could allocate to the SOD contractors if the Delta pumping restrictions were not limiting to be delivered to the CV Contractors in the Delta upon their request. This additional delivery is contingent upon the CV Contractors obtaining a conveyance mechanism outside of the delivery mechanism envisioned in the IRC and that will not harm other CVP contractors. Although this option has been available to the CV Contractors for several years, to date this has not been taken advantage of mainly due to the difficulty in arranging alternative conveyance mechanisms. It is unlikely that the "In Delta Allocation" will be utilized during the two-year term of these IRCs and, additionally, since the specific conveyance mechanism is not known at this time, the action cannot be fully analyzed. This additional allocation will not be analyzed in this document. If a CV Contractor obtains an alternative conveyance mechanism and requests the "In Delta Allocation" Reclamation will analyze the environmental effects of that action through separate documentation.

Kern-Tulare Water District's (formerly Kern Tulare Rag Gulch) Water Use KTWD provides irrigation water to over 17,749 (13,205 acres in KTWD and 4,544 acres in Rag Guch Water District) acres of high-value permanent crops in Kern and Tulare counties. The annual irrigation demand is approximately 54,000 AF, of which the water districts currently provide approximately 40,000 AF (2.2 AF/acre) of imported KTWD water. The remaining 14,000 AFY (0.8 AF/acre) is from groundwater pumped by water users.

KTWD has a 40,000 AFY CVP water service contract (Contract number 14-06-200-8601 – IR12) and Rag Gulch Water District has a CVP contract for 13,300 AFY (Contract number 14-06-200-8367 – IR12). KTWD also has two Kern River contracts (contract numbers 76-61 and 76-63) which expire in 2012 for a total of 23,000 AFY. KTWD also has long-term banking approval for CVP water to be deposited in both Rosedale Rio-Bravo Water Storage District's and North Kern Water Storage District's groundwater banks. From Rosedale Rio-Bravo, KTWD will be able to withdraw up to 9,000 AFY of previously banked water and from North Kern 5,000 AFY of previously banked water may be withdrawn. Recently, KTWD requested approval from Reclamation to increase the annual yield from 9,000 AFY to 21,000 AFY of previously banked water from Rosedale Rio-Bravo which will undergo separate analysis from the IRC.

There are four regulating reservoirs in the district totaling 510 AF of storage. Because KTWD's distribution system is inadequate to fully satisfy irrigation demands and system capacities must be prorated during the summer months, water users rely upon privately-owned wells, even in the wettest of years.

Lower Tule River Irrigation District's Water Use The water supplies in Lower Tule River Irrigation District (LTRID) are groundwater, water rights on the Tule River, and CVP water under two separate contracts. The Tule River water supply is approximately 70,000 AFY. Tule River flows approximately 22 miles through the central part of the district. In 1951, LTRID entered into a long-term water service contract with Reclamation for 61,200 AFY of Class 1 and 238,000 AFY of Class 2 Friant water. In 1975, LTRID entered into a three-way contract with Reclamation and DWR to provide an additional 31,102 AFY of CVP water supply. This second contract is the IRC analyzed within this document (Current contract number 14-06-200-8237A-IR12).

Collectively, LTRID owns or controls approximately 163 miles of canals and approximately 47 miles of river channel. LTRID maintains and operates 12 recharge and regulating basins, covering approximately 3,000 acres. In wetter years, LTRID uses these facilities to recharge the groundwater reservoir. LTRID does not own or control groundwater extraction facilities. Therefore, each landowner must provide privately owned wells to sustain irrigation during periods when LTRID does not have surface water available.

Currently, because LTRID has no exchange arrangements to take delivery of their CV supplies off of the FKC, LTRID sells their CVP contract supplies from the Delta and uses the money to purchase other supplies on the water market. LTRID may enter into similar exchange arrangements with other water districts to obtain their CVP water supplies from the Delta.

Pixley Irrigation District Water Use The Pixley Irrigation District's (PXID) water supply is derived from the use of groundwater, diversions from Deer Creek and CVP water. PXID entered into a long-term water service contract with Reclamation in 1975 for 31,102 AFY (Current contract number 14-06-200-8238A-IR12.

PXID currently contains 69,550 acres, of which 48,302 are irrigated. Deer Creek flows westerly through the entire length of the district. The FKC is located between one to five miles east of the PXID's boundary.

PXID operates a conjunctive use program by supplying a portion of the irrigated lands and a portion for direct groundwater recharge through Deer Creek, the existing canal system, and sinking basins owned or leased by the district. PXID obtains their CVP supplies through a turnout on the FKC into Deer Creek.

PXID does not own or operate any groundwater extraction facilities; however, groundwater is the primary water supply available to lands within PXID. Privately owned wells currently provide water to all irrigated lands within the district. Approximately 31,957 acres of lands rely totally on groundwater pumping for irrigation.

In addition, PXID may enter into an agreement with the approximately 960-acre Pixley Wildlife Refuge to recharge the groundwater.

Currently, because PXID has no exchange arrangements to take delivery of their CV supplies off of the FKC, PXID sells their CVP contract supplies from the Delta and uses the money to purchase other supplies on the water market. PXID may enter into similar exchange arrangements with other water districts to obtain their CVP water supplies from the Delta.

County of Fresno Water Use The County of Fresno has a CVP water service contract for 3,000 AF of water (Current Contract number 14-06-200-8292A-IR12). The County of Fresno currently serves this water to one subcontractor – County Service Area (CSA) #34 who utilizes the supply for M&I purposes. This subcontractor draws their water directly from Millerton Lake after their CV Delta supply has been exchanged for Friant supplies. However, in the past several years the County has been unable to find an exchanger in order to receive their CVP water; therefore, they have relied upon transfers from the City of Fresno or Fresno Irrigation District.

County of Tulare Water Use The County of Tulare entered into a long-term water service contract with Reclamation in 1975 for 5,308 AFY (current contract number 14-06-200-8293A-IR12). The County of Tulare has 10 subcontractors that are the recipients of the CVP water under this contract (see Table 3-2). The County of Tulare requested approval from Reclamation to assign this water to their subcontractors. The 10 subcontractors are described below:

Table 3-2 Subcontractor CVP Quantities

Subcontractors	CVP Quantity (AF)
Alpaugh Irrigation District	100
Atwell Island Water District	50
Hills Valley Irrigation District	2,913
City of Lindsay	50
Saucelito Irrigation District	100
Fransinetto Farms L.L.C. (Formerly Smallwood Vineyards)	400
Stone Corral Irrigation District	950
Strathmore Public Utility District	400
Styro-Tek, Inc.	45
City of Visalia	300

Alpaugh Irrigation District AID is comprised of approximately 10,500 acres, of which 5,400 are irrigated. Groundwater provides the primary water supply to AID. AID also operates 18 wells. Using two of its deep wells, AID provides approximately 300 AFY of potable water supply to the community of Alpaugh.

AID does not have any other contracts or water rights to surface water supplies. However, during wet years the district has been able to utilize excess waters available in the Homeland Canal located on the westerly side of AID, which if not used, would flow into the historic Tulare Lake.

Atwell Island Water District Atwell Island Water District (AIWD) is comprised of 7,136 acres, of which, 4,645 are irrigated.

AIWD does not operate or maintain groundwater recharge or extraction facilities. Landowners must provide privately owned wells to sustain irrigation during periods when the district does not have surface water available.

In wet years, AIWD purchases supplies for use in the district in lieu of pumping groundwater. The district uses primarily surface water supplies when it is available and relies on groundwater only when surface water is unavailable.

Hills Valley Irrigation District HVID receives up to 2,913 AFY of CVP water under its contract with County of Tulare.

HVID entered into a long-term renewable contract with Reclamation in 1959 for construction of facilities. Water deliveries began in 1961 for 21,200 AFY Class 1 and 32,800 AFY of Class 2 Friant water. Currently, the district comprises of 19,453 acres, of which 19,057 are irrigated. The district has five individual water users that have rights in Poplar Irrigation Company of 9.5 shares at 55 AF per share from Mole Ditch.

Saucelito Irrigation District Saucelito Irrigation District (SID) receives up to 100 AFY of CVP water under its contract with County of Tulare.

SID obtains its CVP water supplies from four diversion points on the FKC between MP 100.64 and 107.35 and Deer Creek diversion at MP 102.69. SID engages in exchanges with the other CV Contractors.

Frasinetto Farms, LLC Frasinetto Farms, LLC receives up to 400 AFY of CVP water under its contract with County of Tulare.

Stone Corral Irrigation Stone Corral Irrigation District (SCID) receives up to 950 AFY CVP water under its contract with County of Tulare. SCID is comprised of 6,488 acres, of which 5,470 acres are irrigated. In addition to the County of Tulare subcontract, SCID entered into a long-term water service contract with Reclamation for 7,700 AFY of Friant Division Class 1 water in 1950. In 1991, the contract was amended to 10,000 AFY of Class 1 water.

SCID obtains the CVP water from the FKC at MP 57.90, 59.33, 60.90 and 62.68.

City of Lindsay In 1958, the City of Lindsay entered into a long-term water service contract with Reclamation for 2,500 AFY of Class 1 Friant water under contract number 5-07-20-W0428. The City of Lindsay receives up to 50 AFY of CVP water under its contract with County of Tulare.

Lindsay obtains their CVP water from the FKC at the Honolulu Street turnout. The water treatment plant is at the same location and provides filtration, chemical additions, and chlorination.

Strathmore Public Utility District Strathmore Public Utility District receives up to 400 AFY CVP water under its contract with County of Tulare.

Styro-Tek, Inc Styro-Tek receives up to 45 AFY of CVP water under its contract with County of Tulare. Styrotek is an industry manufacturer of shipping containers. Most of the CVP water is used for cooling. Additionally, the Styro-Tek property is located within the Delano-Earlimart Irrigation District Contractor Service Area and, after Styro-Tek receives its Cross Valley allocation, they then receive CVP water from Delano-Earlimart Irrigation District to make up their water needs.

City of Visalia The City of Visalia receives up to 300 AFY CVP water under its contract with County of Tulare.

Hill's Valley Irrigation District Water Use HVID is currently 4,223 acres, of which 3,067 are irrigated. The district is divided into three segments. Improvement District No.1 covers 1,276 acres, Improvement District No. 2 covers 1,990 acres and the remaining 795 acres are outside any improvement district but are within the HVID's boundaries. HVID has a long-term water service contract with Reclamation for 3,346 AFY. The district has historically received the CVP contract supplies through an exchange with AEWSD. HVID serves water only to agricultural users. HVID has three regulating reservoirs: Anchor Reservoir (0.53 million gallons), American Reservoir (2.0 million gallons), and a 15 AF regulating reservoir. The district does not own groundwater extraction facilities; therefore, individual landowners must provide their own wells to sustain irrigation during periods when HVID does not have surface water available.

Tri-Valley Water District (TVWD) TVWD has approximately 1,840 irrigable acres. TVWD has a contract with Reclamation to receive up to 1,142 AF for irrigation and M&I

Conveyance

The Delta All of the water supplied to the IRC contractors is pumped from the Delta. The CVP water originates in the Sacramento and San Joaquin Rivers. CVP facilities provide for the transport of water through both the San Francisco Bay-Delta Estuary and the Sacramento and San Joaquin River systems and provide for the delivery of water to CVP contractors in both Santa Clara County and the San Joaquin Valley. The Delta Cross Channel moves water from the Sacramento River through an excavated channel and natural channels to the Tracy Pumping Plant, which then pumps water into the DMC.

Westland Water District Conveyance WWD receives water both from the DMC and the SLC with the majority diverted from the SLC. The DMC delivers Delta water to the west side of the San Joaquin Valley, ending at the Mendota Pool, 30 miles west of the city of Fresno. The SLC, which originates at O'Neill Forebay, is a joint use facility with the SWP. Facilities utilized to convey water to WWD include the O'Neil Pumping-Generating Plant and Intake Canal, San Luis Dam and Reservoir (for storage as needed), Dos Amigos Pumping Plant, Coalinga Canal, the Pleasant Valley Pumping Plant, and the SLC from O'Neil Forebay to Kettleman City.

Santa Clara Valley Water District Conveyance Water is conveyed from San Luis Reservoir through the Pacheco Tunnel and Conduit. Water is then conveyed from the Pacheco Conduit

into the Santa Clara Conduit to serve SCVWD. As previously mentioned, facilities have not yet been constructed for water delivery to the PVWMA service area.

Conveyance of Delta CVP Water to the Cross Valley Contractors Reclamation delivers CVP water into DWR's Clifton Court Forebay in the Delta. DWR conveys the CVP water directly through the SWP facilities to the CVC, or may temporarily store the water in San Luis Reservoir for delivery to the CVC at a later time.

Kern Tulare Water District Siphons The siphons transport CVP or other water from the CVC into the FKC and then under appropriate conditions this water can be pumped over the northward checks allowing the water to flow upgradient in the FKC to KTWD. With direct accessibility to CVP supplies, KTWD no longer relies exclusively on exchanges of CV water for Friant water.

Friant Direct Supplies The frequency and availability of direct delivery of Friant Project Water supplies (including surplus water made available pursuant to section 215 of the Reclamation Reform Act) for the CV Contractors is low and generally occurs only in very wet years. On the rare occasions when Friant Project Water supplies are made available, water is conveyed down the FKC directly to the CV Contractors and may be accounted as portions of their Cross Valley (South of Delta) allocation.

Groundwater Resources

Westlands Water District (including DD1 and DD2 service areas) The groundwater basin underlying WWD is comprised generally of two water-bearing zones: (1) an upper zone above a nearly impervious Corcoran Clay layer containing the Coastal and Sierran aquifers and (2) a lower zone below the Corcoran Clay containing the sub-Corcoran aquifer. These water-bearing zones are recharged by subsurface inflow primarily from the west and northeast, and percolation of groundwater, and imported and local surface water. The Corcoran Clay separates the upper and lower water-bearing zones in the majority of WWD but is not continuous in the western portion of WWD.

Groundwater pumping started in this portion of the San Joaquin Valley in the early 1900's. Prior to delivery of CVP water, the annual groundwater pumpage in WWD ranged from 800,000 to 1,000,000 AF during the period of 1950-1968. The majority of this pumping was from the aquifer below the Corcoran Clay, causing the sub-Corcoran groundwater surface to reach the average elevation of more than 150 feet below mean sea level by 1968. The large quantity of groundwater pumped prior to delivery of CVP water caused a significant amount of land subsidence in some areas. Subsidence permanently reduces the aquifer capacity because of the compaction of the water-bearing sediments. WWD has implemented a groundwater management program to reduce the potential for future extreme subsidence.

After delivery of CVP water supplies into WWD began, groundwater pumping declined to about 200,000 AFY, or less, in the 1970's. The reduction in groundwater pumping stabilized groundwater depths and in most portions of WWD, groundwater levels significantly recovered. During the early 1990's, groundwater pumping greatly increased because of the reduced CVP water supplies caused by an extended drought, and regulatory actions related to the CVPIA,

Groundwater pumping quantities are estimated to have reached 600,000 AFY during 1991 and 1992 when WWD received only 25 percent of its contractual entitlement of CVP water. The increase in pumping caused a decline in groundwater levels which have since recovered. Normal or near normal CVP water supplies from 1995 – 1999 have reduced the estimated annual quantity of groundwater pumped to approximately 60,000 AFY, resulting in an increase in water surface elevations. However, since 2000, WWD's water supply has been significantly reduced once again resulting in groundwater pumping to over 200,000 AFY.

Safe yield, or current perennial yield, is the maximum quantity of water that can be annually withdrawn from a groundwater basin over a long period of time (during which water supply conditions approximate average conditions) without developing an overdraft condition. WWD estimates the current safe yield of groundwater underneath the district to be approximately 175,000-200,000 AFY. However, this quantity of groundwater is generally only pumped when other supplemental supplies are not available. This is due to the poorer quality of the groundwater compared to surface water.

WWD supplies groundwater to some district farmers and owns some groundwater wells, with the remaining wells privately owned by water users in WWD.

Santa Clara Valley Water District The three major groundwater basins in the SCVWD service area, which are interconnected and occupy nearly 30 percent of the total county area, are Santa Clara Valley, Coyote and Llagas Basins. Groundwater supplies nearly half of the total water used in Santa Clara County and nearly all of that use is in the Coyote and Llagas basins. In 2000, about 165,000 AF of groundwater was used (SCVWD 2003).

Historically, Santa Clara County has experienced as much as 13 feet of subsidence caused by excessive groundwater withdrawal. SCVWD was created partially to protect groundwater resources and minimize land subsidence.

The rate of subsidence slowed in 1967 when imported water was obtained to replenish groundwater supplies. Today, SCVWD reduces the demand on groundwater and minimizes subsidence through conjunctive use of surface water and groundwater. SCVWD monitors land subsidence through benchmark surveying, groundwater elevation monitoring, and data from compaction wells.

Recharge to the groundwater basins consists of both natural groundwater recharge and artificial recharge through local surface and imported water. SCVWD owns and operates more than 30 recharge facilities and six major recharge systems with nearly 400 acres in recharge ponds. These facilities percolate both local and imported water into the groundwater aquifer. SCVWD does not have its own groundwater extraction facilities, but does levy a charge for all groundwater extractions by local retailers and individual users overlying the Santa Clara Valley Groundwater Basin.

SCVWD owns and operates eleven storage reservoirs with a combined storage capacity of 170,000 AF. These reservoirs are located on most of the major streams in the SCVWD service area. Local surface water supplies include the stream flows that feed into and out of SCVWD's

reservoirs, stream flows that are not captured by reservoirs, and water that flows overland into reservoirs.

Cross Valley Contractors The CV Contractors are located in the Tulare Lake hydrologic region (HR). Within the Tulare Lake HR, CV Contractors are located in the Kings, Kaweah, Tule, Tulare Lake, and northern portion of the Kern County subbasins.
The Tulare Lake HR covers approximately 10.9 million acres and includes all of Kings and Tulare counties and most of Fresno and Kern counties.

Historically, groundwater has been important to both urban and agricultural uses, accounting for 41 percent of the region's total annual supply and 35 percent of all groundwater use in the State. Groundwater use in the region represents about 10 percent of the State's overall supply for agricultural and urban uses (DWR 2003).

3.1.2 Environmental Consequences

3.1.2.1 No Action

Contract provisions under the No Action Alternative stipulate that a tiered pricing structure would be applied. Tiered pricing is mandated under the water conservation section of the CVPIA for contracts of more than three years. Due to chronic shortages in CVP contract deliveries in the IRC service areas, modeling predicts that the number of years when tiered pricing is applicable would be limited to approximately 22 or 24 percent of the time (or one year out of four or five) (See Figure 3.1). Based on modeling during the IRC period there is a relatively low chance that tiered pricing would be in effect. Water supplies do not typically meet demands for most IRC contractors and many IRC contractors are very active on the water market purchasing water supplies. Since much of the IRC contractors' service areas are planted in permanent crops and these contractors have paid more than tiered pricing rates in dry years on the water market to preserve their permanent crop planting investment, increasing water prices due to tiered pricing would not change water use trends.

For those areas where groundwater is of suitable quality and therefore available for irrigation, CVP water is considered to be a supplemental supply. Most agricultural contractors already rely on groundwater supplies and in some cases water transfers to meet on-farm needs. Alternate surface water supplies frequently are expensive. Thus, tiered pricing is unlikely to cause a grower to switch to alternate supplies. Most IRC contractors have the option of switching to groundwater for a limited amount of time. This option would only be utilized (as stated above) if the cost/benefit ratio and the water quality were sufficient to warrant it. Due to continuing overdraft conditions, districts realize that when pumping groundwater above safe yield levels they are mining dry year supplies and that this supply cannot be relied on continually as it is not sustainable.

The CVP supplies for the CV Contractors are unpredictable due to the constraints in deliveries from the Delta. The CV Contractors swap Delta water for Friant water resulting in higher costs for the CV Contractors. In order for the CV Contractors to obtain their Delta supplies through an exchange with the Friant Division Contractors, the runoff on the San Joaquin River must be sufficient to declare a full Class 1 and a minimum percent of Class 2 supply. If these conditions are not met, the CV Contractors do not have the ability to exchange their CV supplies. These

combined conditions result in higher overall costs of water for the CV Contractors compared to neighboring Friant Division Contractors. In dry years, the costs for CV Contractors per AF may double. This is due to fixed contract costs and is independent of the runoff conditions and hydrology.

The CV Contractors may switch from surface water to groundwater in certain years because of tiered water pricing. In certain years, the CV Contractors may purchase additional water supplies. Purchased water by the CV Contractors would come from San Luis Reservoir, Delta, or Friant. This does not represent a new water supply, but rather, part of the water supply described in the PEIS. Overall, the diversion from the Delta or Friant would not change as the diversion would remain within the contract total. The total diversions from the Delta or Friant are not anticipated to change with the tiered pricing with no impact anticipated. The CV Contractors receive water physically from Millerton Lake through exchanges (or occasionally via direct delivery). Changes in CVP water use because of this alternative would not affect this exchange.

In summary, the No Action Alternative would not likely result in the application of tiered pricing during the term of the contracts because of the short duration of IRCs and the reasonable expectation that sufficient CVP allocation to trigger the tiers would occur in only every fourth or fifth year. Further, even if tiered pricing were to apply, it is unlikely to result in a reduction in surface water use, a change in groundwater use, or other actions that could affect water resources. The contractors continue to have less water supply (surface water and groundwater) than demanded, conditions that exist notwithstanding their careful water management (e.g., installation and use of highly efficiency irrigation systems). For those reasons, and others discussed in this EA, implementation of the No Action Alternative is not likely to cause an impact to water resources.

3.1.2.2 Proposed Action

Impacts to water resources associated with the Proposed Action would be comparable to those described under No Action Alternative although tiered pricing provisions are not included in these contracts. Renewal of the IRCs with only minor administrative changes to the contract provisions would not result in a change in contract water quantities or a change in water use. Water delivery during the IRC period would not exceed historic quantities. Therefore, there would be no effect on surface water supplies or quality.

The renewal of interim contracts delivering the same quantities of water that have historically been put to beneficial use would not result in any growth-inducing impacts. In addition, no substantial changes in growth are expected to occur during the short timeframe of this renewal. Therefore, the Proposed Action would have no adverse impacts on water resources.

3.1.2.3 Cumulative Effects

No new water supplies would be added to the region. Renewal of the nine IRCs would have no impact on water resources as described previously and as such has no cumulative effects.

3.2 Land Use

The following discussion provides information on land uses within each IRC contractor's service area and includes a discussion of current agriculture and future trends in agriculture as applicable. While this information is indicative of land use and growth trends in the IRC service areas, it is not intended to be a comprehensive list of every development project planned or proposed.

3.2.1 Affected Environment

Westlands Water District

WWD (inclusive of DD1 and DD2) covers almost 950 square miles of prime farmland between the California Coast Range and the trough of the San Joaquin Valley in western Fresno and Kings Counties. It averages 15 miles in width and stretches 70 miles in length from Mendota on the north to Kettleman City on the south. Interstate 5 is located near the district's western boundary. Nearly all land within the current WWD service area was at one time farmed using groundwater. The first deliveries of CVP water from the SLC to WWD began in 1968.

Currently WWD's (inclusive of DD1 and DD2) district boundaries encompass 604,000 acres with an irrigable acreage of 567,800 acres. More than 60 different crops are grown commercially in WWD. The cropping patterns have changed over the years depending upon water availability, water quality, the agricultural economy and market factors. The acreage trend is toward increased planting of vegetable and permanent crops while cotton and grain acreage have decreased.

The major urban community entirely within WWD's boundary is Huron. Three Rocks and Five Points are smaller communities within WWD. The communities of Firebaugh, Mendota, Kerman, Tranquillity, San Joaquin, Lemoore, and Stratford lie just outside the district's eastern edge.

The landowners in WWD have farmed their lands for many years. Each year since 1989, additional lands have been set aside over and above normal crop fallowing. The increase in fallowed acres is the direct result of insufficient high quality water to support the wide variety of crops grown in WWD. In certain water year types, such as dry or critically dry, in combination with regulatory cutbacks for environmental protection of endangered and threatened species, CVP contract water, supplemental water, and good quality groundwater supplies are not always available to meet the irrigation demands. As a result of the shortfall, WWD has experienced severe land fallowing.

During the period 1997 through 2001 (this period selected because the information is available from WWD Website) WWD has averaged 564,138 acres in production and cultivated more than 48 different types of crops. WWD average annual CVP water supply over the same period was 801,688 AFY. This quantity of CVP Contract supply is 69.7 percent of the total entitlement under the CVP water supply contracts.

Santa Clara Valley Water District

The SCVWD, which has the same boundaries as Santa Clara County, covers about 1,300 square miles from San Francisco Bay south to the Pajaro River. SCVWD includes the Santa Clara

Valley and portions of the Diablo Range and Santa Cruz Mountains. The Santa Clara Valley runs the entire length of Santa Clara County from north to south, bounded by the Diablo Range to the east and the Santa Cruz Mountains to the west. The valley is bounded to the northwest by the southern reaches of San Francisco Bay and to the south by the Pajaro River. Most of the development and water use occurs in the 350 square mile valley floor. SCVWD encompasses 15 cities, including San Jose, Mountain View, Palo Alto, Santa Clara, Sunnyvale, and Gilroy and includes much of the area known as the "Silicon Valley".

Cross Valley Contractors

The service areas of the eight CV Contractors are located along the eastern edge of the southern San Joaquin Valley, stretching from Fresno County on the north to Bakersfield on the south (Figure 3-1). The CV Contractors are dispersed among the Friant Division Contractors. Surface water has historically been delivered to over 190,000 acres of irrigated farmland within the service areas of the eight CV Contractors and their subcontractors. Water deliveries are used primarily for irrigation, but a small amount of water is used for M&I purposes.

The CV Contractors service area is a significant contributor to the production of several crops in California (See Table 3-3). Of the 868,330 acres of the grapes grown in California, 43 percent are within the four counties that encompass the CV Contractors service area. The CV unit is also a substantial supplier of cotton (U.S. Department of Agriculture 2009).

Table 3-3 2002 Land Use

Crop	Kern-Tulare Water District, includes Rag Gulch (acres)	Lower Tule River (acres)	Pixley (acres	Hills'Valley (acres)
Vineyards	7,256		2,760	176
Deciduous Orchard	2,306		1,960	312
Subtropical Orchard	7,844			2,069
Cotton		11,045		
Other	1,007	57,003	14,597	
Total Irrigated	18,413	84,426	41,751	3,602
Non-Irrigated Acres	5,481	19,674	27,897	717
Total Acres	23,894	104,000	69,648	4,319

Source: Reclamation 2003
Note: Tri-Valley Water District is exempt from reporting crop water needs information.
No data are available for the County of Fresno and the County of Tulare

The service area of the IRCs covers a major portion of six counties (Fresno, Tulare, Kings, Kern, San Joaquin, and Santa Clara). The six California counties account for $9.38 billion in gross agricultural production (Table 6). The leading agricultural commodities in these counties are grapes, milk, cotton, almonds, and citrus, which accounted for nearly $4 billion in gross agricultural production in 2002. The leading crops in terms of acreage in the IRC contractors' service areas are alfalfa, corn, cotton, wheat, orchards, and vineyards.

Table 3-4 Ranking of Cross Valley Contractor Counties by Total Value of Agricultural Production

1998 CA Rank	County	2002 Production ($1,000)	Number of Farms (# farms)	Land in Farms (acres)	Average size of Farm (acres)	Leading Crops
1	Fresno	2,759,421 (down 1% from 1997)	6,281 (down 11% from 1997)	1,928,865 (down 0.4% from 1997)	307 (up 12% from 1997)	Grapes, poultry, cotton, tomatoes, milk
2	Tulare	2,338,577 (up 20% from 1997)	5,738 (down 8% from 1997)	1,393,456 (up 1% from 1997)	243 (up 12% from 1997)	Forage, corn (for silage) grapes, citrus, almonds, cotton, poultry, milk, pork, beef
4	Kern	2,058,705 (up 4% from 1997)	2,147 (down 9% from 1997)	2,731,341 (down 5 % from 1997)	1,272 (up 5% from 1997)	Almonds, other fruit and nuts, grapes, cattle & calves, vegetables
7	San Joaquin	1,222,454 (up 3% from 1997)	4,026 (down 8% from 1997)	812,629 (down 2% from 1997)	202 (up 7% from 1997)	Fruit, nuts and berries, poultry, corn for grain, milk, vegetables
12	Kings	793,061 (up 14% from 1997)	1,154 (down 5% from 1997)	645,598 (down 2% from 1997)	559 (up 3% from 1997)	Cotton, forage, wheat for grain, corn for silage, vegetables
28	Santa Clara	208,498 (up 7% from 1997)	1,026 (down 17% from 1997)	320,851 (down 2% from 1997)	313 (up 19% from 1997)	Vegetables, fruits, tree nuts and berries, nursery stock

Source: USDA 2002

Table 3-4 indicates that agricultural production is generally up, the number of farms and acreage in farming is decreasing, but the farm size is increasing.

Water for communities and other M&I users in the IRC contractors' service area comes almost entirely from pumping of groundwater. The quality of the groundwater, for the most part, does not require treatment prior to use. There are no major population centers in the CV Contractors' service area. The only significant use of CV CVP water for M&I purposes is for the Strathmore Public Utility District, City of Lindsay, City of Visalia, Styro-Tek, and County of Fresno.

The conversion of agricultural land to alternate uses is not a significant issue for the IRC Contractors because of the lack of major population centers in their service areas. Exceptions are the cities of Silicon Valley, Tracy, Fresno, Tulare, Visalia, and Delano that have experienced rates of growth similar to the rest of the State of California. Historically, agricultural lands receiving CVP water that are converted to urban uses have not continued to use CVP water with the exception of Santa Clara County. The land use change generally results in a change in water supply, from agricultural to urban community water system. Eastside groundwater is generally preferred for a community water system. The CVP water is generally reallocated to other agricultural lands in the district or used to recharge groundwater. CV Contractor water supplies to these municipalities either do not contribute to the community water supply or are very minor portions of their water supplies. The subdivisions in Millerton New Town and Brighton Crest

are other exceptions where County of Fresno supplies provide the entire water supply. Expansion of the County of Fresno's service area has been analyzed under separate environmental documentation and is not part of this IRC EA. Any future service area expansion will also be analyzed separately.

3.2.2 Environmental Consequences

3.2.2.1 No Action

The renewal of contracts with only minor administrative changes to the contract provisions as required by CVPIA would not provide for additional water supplies that could act as an incentive for increased or decreased acreage of agricultural production or municipal development. Generally, lands within the IRC contractor service areas that are productive are farmed or have maximized M&I development with the CVP water available. Uncertainty of supply due to the short-term duration of the renewal could act as a disincentive for farmers to preserve their lands from urban developments. However, most areas within the IRC contractor service areas are not near current M&I growth. Also for those limited areas that are near such growth, the short terms of the IRCs do not provide sufficient certainty to permit the M&I development of land now in agricultural production, meaning that the No Action Alternative is not likely to have impacts on conversion of irrigated land to other uses.

Contract provisions stipulating the pricing structure for delivered water are not likely to result in changes in water use as the districts within the IRC contractor service areas are water short even in high allocation years. Water short farmers have demonstrated (via purchases on the water market) a willingness to pay tiered pricing rates. Land would continue to be used for existing purposes. Also, because this is an interim renewal process, it is unlikely that the uncertainty of the water supply would result in any changes in agricultural practices that would influence land use.

3.2.2.2 Proposed Action

Impacts to land use associated with the Proposed Action would be comparable to those described under the No Action Alternative. Tiered pricing with its potential price increases is not included as part of the Proposed Action. The lack of tiered pricing would have no impact on land use. It is possible that conversion from agricultural uses to M&I uses would occur during the term of the IRCs, but if such conversions occur it would not be a result of contract renewal. The pressures to convert are the same pressures that would have existed with the previous expiring interim contracts and with the No Action Alternative. Local land use agencies have the oversight of these actions. It is unlikely that significant conversions to M&I uses would occur during the term of the IRC or that the short-term water supply under that contract would contribute to any such conversion. Since contracts are mandated to be renewed for the quantity of water that can be put to beneficial use, the water supply would be available for either purpose of use and the IRCs would not affect the potential M&I conversion.

The IRC would continue to support current land uses and no conversion of agricultural lands currently in production would convert to urban uses during the term of the IRCs. The Proposed Action would have no affect on land use.

3.2.2.3 Cumulative Effects

Since the alternatives have no impact on land use, they also have no cumulative effects.

3.3 Biological Resources

3.3.1 Affected Environment

Reclamation has provided detailed information on the affected environment contained in documents already incorporated by reference. That information will not be repeated here.

The following species list (Table 3-5) was obtained on December 10, 2009, by accessing the U.S. Fish and Wildlife Database. The list is for the following counties: Fresno, Kern, Kings, Santa Clara, and Tulare.

Table 3-5 Federal Listed Threatened and Endangered Species

Common Name	***Scientific Name***	***Status[1]***	***Effects[2]***	***Occurrence in the Study Area[3]***
Invertebrates				
Bay checkerspot butterfly	*Euphydryas editha bayensis*	FT, X	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Conservancy fairy shrimp	*Branchinecta conservatio*	FE	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Kern primrose sphinx moth	*Euproserpinus euterpe*	FT		Species is outside the action area
Longhorn Fairy Shrimp	*Branchinecta longiantenna*	FE	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Smith's Blue Butterfly	*Euphilotes enoptes smithi*	FE		Species is outside the action area
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	NE	The species is outside of the action area
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT, X	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Vernal pool tadpole shrimp	*Lepidurus packardi*	E, X	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Zayante Band-Winged Grasshopper	*Trimerotropis infantilis*	FE , X		Species is presumed extirpated in the action area
Amphibians				
California red-legged frog	*Rana aurora draytonii*	FT	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
California tiger salamander, central population	*Ambystoma californiense*	FT, CE, X	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Mountain yellow-legged frog	*Rana muscosa*	C		Species is outside the action area
Yosemite toad	*Bufo canorus*	C		

Reptiles				
Alameda whipsnake	*Masticophis lateralis eurxanthus*	FT	NLAA	Species is outside the action area, critical habitat is slightly within SCVWD, no changes in land uses and no new construction or facilities through the duration of the IRC
Blunt-nosed leopard lizard	*Gambelia (=Crotaphytus) sila*	FE, CE	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Giant garter snake	*Thamnophis gigas*	FT, CT	NLAA	No discharge from WWD, species not present in remainder of action area
Fish				
Central Valley steelhead	*Oncorhynchus mykiss*	FT NMFS*	NE	Effects to this species are operational, and will be addressed in the CSCO
Central Valley steelhead Southern California Steelhead South Central California steelhead Central California coastal steelhead	Oncorhynchus mykiss	FT NMFS FE FT X	NE	Effects to this critical habitat are operational, and will be addressed in the CSCO
Central Valley spring-run chinook salmon winter-run chinook salmon, Sacramento River	*Oncorhynchus tshawytscha*	FT NMFS FE NMFS	NE	Effects to this species are operational, and will be addressed in the CSCO
Coho Salmon	*Oncorhynchus* (=Salmo) *kisutch*	FE, CE	NE	Effects to this species are operational, and will be addressed in the CSCO
Lahontan cutthroat trout	*Oncorhynchus* (=Salmo) *clarki henshawi*	FT		
Little Kern golden trout	*Oncorhynchus* (=Salmo) *aquabonita whitei*	FT, X	NE	The species is outside of the action area
Paiute cutthroat trout	*Oncorhynchus* (=Salmo) *clarki seleniris*	FT	NE	The species is outside of the action area
Tidewater goby	*Eucyclogobius newberryi*	FE	NE	The species is outside of the action area
Birds				
California Condor	*Gymnogyps californianus*	FE, CE, X	NE	The species is outside of the action area
California Least Tern	*Sternula antillarum* (=Sterna, =*albifrons) browni*	FE, CE	NLAA	CVP water is unlikely to result in changes to the evaporation ponds used by the species
Least Bell's Vireo	*Vireo bellii pusillus*	FE	NLAA	No changes in land uses and no new

				construction or facilities through the duration of the IRC
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	FE, CE, X	NE	The species is outside of the action area
Western Snowy Plover	*Charadrius alexandrinus nivosus*	FT	NE	Species habitat not in land types affected by the contract water
Western Yellow-billed Cuckoo	*Coccyzus americanus occidentalis*	FC, CE	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Mammals				
Buena Vista Lake shrew	*Sorex ornatus relictus*	E, X	NE	The species is outside of the action area
Fresno kangaroo rat	*Dipodomys nitratoides exilis*	FE, CE, X	NE	Species is presumed extirpated in the action area; critical habitat is outside of the action area.
Giant kangaroo rat	*Dipodomys ingens*	FE, CE	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Salt marsh harvest mouse	*Reithrodontomys raviventris*	FE, CE	NE	Species habitat not in land types affected by the contract water
San Joaquin kit fox	*Vulpes macrotis mutica*	FE, CT	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
San Joaquin Valley Woodrat	*Neotoma fuscipes riparia*	FE, CE	NE	Species is presumed extirpated in the action area
Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	FE, CE	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Plants				
Bakersfield cactus	*Opuntia treleasei*	FE, CE	NE	The species is outside of the action area
California jewelflower	*Caulanthus californicus*	FE, CE	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Contra Costa Goldfields	Lasthenia conjugens	FE , X	NE	Species is presumed extirpated in the action area
Coyote ceanothus	*Ceanothus ferrisae*	FE	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Hairy Orcutt grass	*Orcuttia pilosa*	CE, X	NE	The species is outside of the action area
Hartweg's golden sunburst	*Pseudobahia bahiifolia*	FE, CE	NE	The species is outside of the action area
Hoover's spurge	*Chamaesyce hooveri*	FT, X	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Keck's checker-mallow (=checkerbloom)	*Sidalcea keckii*	FE, X	NE	The species is outside of the action area

Kern mallow	*Eremalche kernensis*	FE	NE	The species is outside of the action area
Mariposa pussy-paws	*Calyptridium pulchellum*	FT	NE	The species is outside of the action area
Metcalf Canyon jewelflower	*Streptanthus albidus ssp. albidus*	FE	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Palmate-bracted bird's-beak	*Cordylanthus palmatus*	FE, CE	NE	The species is outside of the action area
Ramshaw sand-verbena	*Abronia alpina*	C	NE	The species is outside of the action area
Robust Spineflower	Chorizanthe robusta var. robusta	FE , X	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
San Joaquin adobe sunburst	*Pseudobahia peirsonii*	FT, CE	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
San Joaquin woolly-threads	*Monolopia congdonii* (*=Lembertia congdonii*)	FE	NLAA	Urban areas within WWD (Avenal and Coalinga) are not likely to expand during the IRC period; WWD water would not support such expansion regardless
San Joaquin Valley Orcutt grass	*Orcuttia inaequalis*	FT, CE, X	NE	Species is presumed extirpated in the action area; critical habitat is outside of the action area.
Santa Clara Valley dudleya	*Dudleya setchellii*	FE	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC
Springville clarkia	*Clarkia springvillensis*	FT, CE	NE	The species is outside of the action area
Succulent (=fleshy) owl's-clover	*Castilleja campestris ssp. succulenta*	FT, CE, X	NE	The critical habitat is outside of the action area
Tiburon paintbrush	*Castilleja affinis ssp. neglecta*	FE, CE	NLAA	No changes in land uses and no new construction or facilities through the duration of the IRC

1 Status= Listing of special status species, unless otherwise indicated
CE: California listed as Endangered
CT: California listed as Threatened
FE: Federally listed as Endangered
FT: Federally listed as Threatened
FT NMFS: Federally listed as Threatened by National Marine Fisheries Service
MBTA: Birds protected by the Migratory Bird Treaty Act
X: Critical Habitat designated for this species
C: Candidate to become proposed species
2 Effects = Effect determination
NLAA: Not likely to adversely affect
NE: No Effect
3 Definition Of Occurrence Indicators
Absent: Species not recorded in study area and/or habitat requirements not met
Present: Species recorded in area and habitat present
Unlikely: Species recorded in area but habitat not present
4 CNDDB = California Natural Diversity Database provided by CDFG 2009
* NMFS = National Marine Fisheries Service

Baseline information data sources included appendices to the CVPIA PEIS (Reclamation 1997b, 1997e), BO on *Operation of the CVP and Implementation of the CVPIA* (USFWS 2000), BO on the *Operations and Maintenance Program Occurring on Bureau of Reclamation Lands Within the South-Central California Area Office* (USFWS 2005), and the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDB).

Documents Addressing Potential Impacts to Listed Species Associated with Deliveries to the IRC Contractors' Service Areas

Reclamation and DWR are currently cooperating in conducting endangered species consultations and compliance to address the combined long-term operations of the CVP and SWP, as part of the CSCO. Reclamation is the lead federal agency and DWR is the lead state agency for these consultations. Reclamation has consulted with the U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS) regarding potential operational impacts to species listed under the federal ESA. DWR has consulted with CDFG regarding potential operational impacts to species listed pursuant to the California ESA. The CSCO is a detailed analysis and explanation of the criteria and procedures for conducting combined CVP and SWP operations.

The nine interim water service contracts contain provisions that allow for adjustments resulting from court decisions, new laws, and from changes in regulatory requirements imposed through re-consultations. Accordingly, to the extent that additional restrictions are imposed on CVP operations to protect threatened or endangered species, those restrictions would be implemented in the administration of the nine interim water service contracts considered in this EA. As a result, the IRCs analyzed would conform to any applicable requirements imposed under the federal ESA or other applicable environmental laws.

In addition, Reclamation has consulted under the ESA on the *Operations and Maintenance Program Occurring on Bureau of Reclamation Lands within the South-Central California Area Office,* resulting in a BO issued by the FWS (FWS 2005) on February 17, 2005 (1-1-04-0368). The BO considers the effects of routine operation and maintenance of Reclamation's facilities used to deliver water to the IRCs service area, as well as certain other facilities within the

jurisdiction of the South-Central California Area Office, on California tiger salamander, vernal pool fairy shrimp, valley elderberry longhorn beetle, blunt-nosed leopard lizard, vernal pool tadpole shrimp, San Joaquin wooly-threads, California red-legged frog, giant garter snake, San Joaquin kit fox, and on critical habitat for the California red-legged frog and California tiger salamander.

Westlands Water District's Service Area

Development of land within WWD's service area began many decades ago, and is continuing through the present. Undeveloped lands on the valley floor are now restricted to small habitat patches that are fragmented and isolated from each other. As a result of the conversion of natural habitats, many species have been displaced or extirpated from the region. Most of the species that occurred historically are now restricted to habitat patches that are fragmented and isolated, making it difficult for viable populations to exist. Some species have adapted to portions of the new landscape and are able to maintain populations. However, as a result of the largely fragmented habitats, the potential for expansion or growth of these populations is greatly reduced. Because of the reduction in habitat available to these species, remnants of habitat such as wetlands and riparian forests are increasingly valuable and important to resident and migratory wildlife species.

Cross Valley Contractors' Service Area

The CV Contractor's service areas cover an extensive area in the San Joaquin Valley including parts of Fresno, Tulare, and Kern Counties, and a very small portion in southeastern Kings County (Atwell Island Water District).

Major land use within the CV Contractors' service area includes natural or native habitats, agriculture, and urban areas. Major natural areas include grasslands (native and nonnative), oak woodlands, riparian areas, and freshwater aquatic communities (seasonal wetlands, vernal pools, and ponds) [Holland 1986; Mayer and Laudenslayer 1988; Holland and Keil 1989; 1989; Hickman 1993; Harvey 1995]. Agricultural areas include row crops, vineyards, orchards, grains, cotton, pastures, and dairies.

3.3.2 Environmental Consequences

3.3.2.1 No Action

The No Action Alternative is the renewal of existing IRCs as required by non-discretionary CVPIA provisions addressed in the CVPIA PEIS. The No Action Alternative would only continue, for an interim period, water deliveries that accommodate current land uses. Environmental commitments in existence as a result of the existing and future BO's, including the CVPIA BO (Reclamation and Service 2000) would be met under the No Action Alternative, including continuation of ongoing species conservation programs.

Execution of IRC's would not involve construction of new facilities or installation of structures. Ongoing trends in irrigation methods are toward higher efficiency systems and related changes in cropping, generally away from row crops and toward permanent crops. Reclamation anticipates that those trends would continue under the No Action Alternative, because those trends are spurred in part by water shortages from the implementation of laws and regulations that reduced the quantity of CVP water available for delivery to the IRC contractors. Therefore, species

inhabiting orchards and other permanent crops would benefit and those preferring row crops would be adversely affected under the No Action Alternative, but over the short interim period, these changes are not likely to be substantial.

For irrigation, these trends are clear enough to support the conclusion that other economic considerations would outstrip the effects of tiered pricing for irrigation water under the No Action Alternative, so no effects on biological resources are expected from its implementation.

With regard to M&I development, the short term of the contracts would not provide the long-term water supply required for conversions from agriculture to M&I uses. Lack of new development would not, itself, affect species and habitats.

For these reasons, the No Action Alternative would not result in substantial changes in natural and semi-natural communities and other land uses that have the potential to occur within study area and other portions of the IRC contractors' service areas. The area of use and types of use are expected to fall within the historic ranges. As a result, the No Action Alternative would not result in adverse effects on fish, vegetation, or wildlife resources located in the study area and other portions of the IRC contractors' service areas.

3.3.2.2 Proposed Action

CVP-wide impacts to biological resources were evaluated in the PEIS, and a FWS BO to address potential CVP-wide impacts was completed on November 21, 2000. The programmatic BO and Essential Fish Habitat Conservation Recommendations prepared by NOAA NMFS for the CVPIA were completed on November 14, 2000.

Given the hardening of demand that has already occurred in response to chronic shortages in CVP contract supplies, and ongoing trends toward increased irrigation efficiency and economic factors apart from the contract that influence crop selection, and the lack of tiered pricing, the Proposed Action is unlikely to have any effect on water application for irrigation within the IRC contractors' service areas. In all other aspects, the effects of the proposed contracts are substantially similar to those under the No Action Alternative, so the Proposed Action would not result in changes in natural and semi-natural communities and other land uses that have the potential to occur within the study area.

Reclamation has determined that there would be no effects to species and critical habitats under the jurisdiction of NOAA NMFS within the IRC contractors' service areas. Effects to species and critical habitats under the jurisdiction of FWS within the IRC contractors' service areas would be addressed in the BO issued by that agency to Reclamation before the interim contracts are signed. Such effects include loss of habitat and reduced habitat values, resulting from ongoing trends within the Valley supported in part by water provided under the IRCs, and are considered to be indirect effects under the federal ESA.

3.3.2.3 Cumulative Effects

Interim renewal contracts, when added to other past, present, and reasonably foreseeable future actions, represent a continuation of existing conditions which are unlikely to result in cumulative impacts on the biological resources of the study area. Interim renewal contracts obligate the delivery of the same contractual amount of water to the same lands without the need for

additional facility modifications or construction. Thus, the interim renewal contracts, together with reasonably foreseeable future actions, would not incrementally contribute to any physical impacts to IRC contractors' service areas biological resources.

Also, interim renewal contracts would occur within the context of implementation of the CVPIA by the United States Department of the Interior (DOI), including Reclamation and FWS. Reclamation and the FWS explained the CVPIA in a report entitled "CVPIA, 10 Years of Progress", as follows:

> The CVPIA has redefined the purposes of the CVP to include the protection, restoration, and enhancement of fish, wildlife, and associated habitats; and to contribute to the State of California's interim and long-term efforts to protect the San Francisco Bay/Sacramento-San Joaquin River Delta Estuary (Delta). Overall, the CVPIA seeks to "achieve a reasonable balance among competing demands for use of [CVP] water, including the requirements of fish and wildlife, and agricultural, municipal and industrial, and power contractors."

Finally, as explained above, interim renewal contracts would be subject to regulatory constraints imposed pursuant to Section 7 of the ESA, regardless of whether those constraints exist today, are imposed through a re-consultation, or result from litigation concerning applicable BOs.

3.4 Cultural Resources

3.4.1 Affected Environment

Cultural resources is a term used to describe both 'archaeological sites' depicting evidence of past human use of the landscape and the 'built environment' which is represented in structures such as dams, roadways, and buildings. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation which outlines the Federal Government's responsibility to cultural resources. Other applicable cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act (NAGPA), and the Archaeological Resources Protection Act (ARPA). Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources on or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 Code of Federal Regulations (CFR) Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office (SHPO), to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the

identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

Cultural resources in this area are generally prehistoric in nature and include remnants of native human populations that existed before European settlement. Prior to the 18th Century, many Native American tribes inhabited the Central Valley. It is possible that many cultural resources lie undiscovered across the valley. The San Joaquin Valley supported extensive populations of Native Americans, principally the Northern Valley Yokuts, in the prehistoric period. Cultural studies in the San Joaquin Valley have been limited. The conversion of land and intensive farming practices over the last century has probably destroyed many Native American cultural sites (Reclamation 2006).

The CVP is being evaluated for the National Register of Historic Places (NRHP). Facilities related to this study area include the DMC, Friant Dam and the FKC.

Friant Dam is located on the San Joaquin River, 25 miles northeast of Fresno, California. Completed in 1942, the dam is a concrete gravity structure, 319 feet high, with a crest length of 3,488 feet. The FKC carries water over 151.8 miles in a southerly direction from Millerton Lake to the Kern River, four miles west of Bakersfield. The water is used for supplemental and new irrigation supplies in Fresno, Tulare, and Kern Counties. Construction of the canal began in 1945 and was completed in 1951.

The Delta-Mendota Canal, completed in 1951, carries water southeasterly from the Tracy Pumping Plant along the west side of the San Joaquin Valley for irrigation supply, for use in the San Luis Unit, and to replace San Joaquin River water stored at Friant Dam and used in the Friant-Kern and Madera systems. The canal is about 117 miles long and terminates at the Mendota Pool, about 30 miles west of Fresno (Reclamation 2006).

3.4.2 Environmental Consequences

3.4.2.1 No Action

The No Action Alternative would not change nor modify any features of the CVP nor result in ground disturbance and has no potential to affect historic properties pursuant to 36 CFO Part 800.3(a)(1).

3.4.2.2 Proposed Action

The Proposed Action is an administrative action that would allow for the flow of water through existing facilities to existing users. There would be no ground disturbance or modification needed to the existing facilities as a result of this action. As a result there is no potential to affect historic properties pursuant to 36 CFR Part 800.3(a)(1). There would be no impacts to cultural resources as a result of implementing the proposed action.

3.4.2.3 Cumulative Effects

Since there would be no potential to affect historic properties there would be no impacts to cultural resources due to the alternatives, there would be no cumulative effects to cultural resources.

3.5 Indian Trust Assets

3.5.1 Affected Environment

Indian Trust Assets (ITA) are legal interests in property held in trust by the U.S. for federally-recognized Indian tribes or individual Indians. An Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITA can include land, minerals, federally-reserved hunting and fishing rights, federally-reserved water rights, and in-stream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally-recognized Indian tribes with trust land; the U.S. is the trustee. By definition, ITA cannot be sold, leased, or otherwise encumbered without approval of the U.S. The characterization and application of the U.S. trust relationship have been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions. Consistent with President William J. Clinton's 1994 memorandum, "Government-to-Government Relations with Native American Tribal Governments," Bureau of Reclamation (Reclamation) assesses the effect of its programs on tribal trust resources and federally-recognized tribal governments. Reclamation is tasked to actively engage federally-recognized tribal governments and consult with such tribes on government-to-government level (59 Federal Register 1994) when its actions affect ITA.

The nearest ITA is Table Mountain Rancheria which is directly adjacent to Fresno CSA #34 and #34A.

3.5.2 Environmental Consequences

3.5.2.1 No Action

Under the No Action Alternative, continuous delivery of project water to existing contractors would not affect any ITA. Existing rights would not be affected, no physical changes to existing facilities are proposed and no new facilities are proposed.

3.5.2.2 Proposed Action

Impacts to ITA associated with the Proposed Action would be comparable to those described under the No Action Alternative. Therefore, there would be no adverse impacts to ITA.

3.5.2.3 Cumulative Effects

As there would be no impacts from the Proposed Action, there would be no cumulative effects to ITA.

3.6 Socioeconomic Resources

3.6.1 Affected Environment

Agriculture is a very important industry in the area surrounding the IRC contractors' service areas. If taken together, the farm and agricultural services sectors are important to all five counties. Agriculture takes on additional significance because it is generally considered a "primary" industry (along with mining and manufacturing). Santa Clara is the only county in the IRC contractors' service where agriculture is not the "primary industry." A reasonably large portion of activity in non-primary industries can be attributed to support for primary industry activity in an area. Changes in primary industry activity, therefore, usually precipitate additional changes in non-primary or support industries.

The social conditions in the IRC contractors' service area are described with factors such as employment level, educational opportunities, the income level, the community social structure, and the need for public social assistance programs. These conditions were described in the PEIS and are summarized below.

The IRC contractors' service area is predominately rural with numerous small cities. Large communities, such as Fresno, San Jose, Tracy and Bakersfield, are also located in the vicinity of the CV Contractors service area. The regional economic indicators of social well being are all measures of the social conditions within a region. For the Tulare area, the unemployment rate is higher than in urban areas (Table 3-6), attributed to a large seasonal labor market and limited availability of employment in other industries. Unemployment for Fresno, Kern, and Tulare Counties ranged from 4.5 to 8.5 percent in 2006 but increased to 13.9 to 14.9 percent in 2009 (EDD 2009). Statewide unemployment was 4.9 percent in 2006 but increased to 12.0 percent in 2009 (see Table 3-6). As the farming economy declines, the employment opportunities also decline.

Santa Clara County is an exception to the above and has a different socioeconomic setting than the other predominantly agricultural based contractors. Santa Clara County has median household incomes above the state average, $84,265 (2007). The state-wide average is $59,928. Santa Clara County has a highly educated workforce with over 40.5 percent of the population having a college education. Statewide less than 30 percent are college educated. Santa Clara County's economy is tied more to high tech markets than to the agricultural sector.

Table 3-6 County-Level Socioeconomic Data

County	2008 Population (estimate)	2009 Labor Force	2009 Employment	1999 Per Capita Income (most recent available)	2009 Unemployment Rate (%)
Fresno	909,153	452,200	388,600	$15,495	14.1 %
Kern	800,458	377,400	325,100	$15,760	13.9 %
Tulare	426,276	206,300	175,600	$14,006	14.9 %
Kings	149,518	59,700	51,400	$15,848	13.9 %
Santa Clara	1,764,499	886,600	782,200	$38,795	11.8 %
TOTALS	4,722,292	1,457,200	1,266,600	N/A	14.0%
California	36,756,666	18,365,000	16,164,300	$22,711	12.0%

Sources: Census Bureau 2009, EDD 2009

3.6.2 Environmental Consequences

3.6.2.1 No Action

The No Action Alternative is the renewal of existing IRCs as required by non-discretionary CVPIA provisions addressed in the CVPIA PEIS. The No Action Alternative would only continue, for an interim period, water deliveries that accommodate current land uses. Contract provisions under the No Action Alternative stipulate that a tiered pricing structure would be

applied. Tiered pricing is mandated under the water conservation section of the CVPIA for contracts of more than three years.

Historic water deliveries and CVP facility operations would continue under the No Action Alternative. No changes in power generation, recreational opportunities, or agricultural economics are expected. Thus, no economic impacts would be anticipated to occur under the period of renewal.

3.6.2.2 Proposed Action

Potential socioeconomic impacts associated with the Proposed Action would be comparable to those described under the No Action Alternative; however, under the Proposed Action there would be no potential for effects to occur due to tiered pricing. Thus, renewal of the interim contracts with only minor administrative changes to the contract provisions would not result in socioeconomic impacts under the period of renewal.

3.6.2.3 Cumulative Effects

Since there would be no effect of the Proposed Action, there would be no cumulative effects to socioeconomic resources.

3.7 Environmental Justice

3.7.1 Affected Environment

Executive Order 12898, dated February 11, 1994, requires Federal agencies to ensure that their actions do not disproportionately impact minority and disadvantaged populations. Some information relating to the socioeconomic stratification of the IRC contractors can be found above. The market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America. The population of some small communities typically increases during late summer harvest. Table 3-7 characterizes the area by county.

Table 3-7 Community Characteristics by County

	Fresno County		Kings County		Kern County		Santa Clara County		California	
General Characteristics	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**	**Number**	**%**
White	738,232	81.2	125,293	84.0	683,591	85.4	1,093,989	62.0	28,155,606	76.6
Black or African American	52,731	5.8	12,380	8.3	51,229	6.4	51,170	2.9	2,462,697	6.7
American Indian/Alaskan Native	18,183	2.0	3,281	2.2	14,408	1.8	14,116	0.8	441,080	1.2
Asian	79,096	8.7	4,773	3.2	32,018	4.0	241,736	31.2	4,594,583	12.5
Native Hawaiian/Pacific Islander	1,818	0.2	447	0.3	1,601	0.2	7,058	0.4	147,027	0.4
Hispanic/Latino (of any race)	442,758	48.7	73,534	49.3	377,016	47.1	458,769	26.0	13,452,940	36.6
Two or more races	19092	2.1	2,983	2.0	16,810	2.1		2.7	955,673	2.6
Average household size	3.09		3.18		3.03		2.92		2.87	
Median household income	$46,547		$45,087		$46,639		$84,265		$59,928	
Individuals below poverty level	181,831	20	29,006	19.4	144,883	18.1	146,453	8.3	4,557,827	12.4

Source: US Census Bureau 2009.

3.7.2 Environmental Consequences

3.7.2.1 No Action

Contract provisions under the No Action Alternative include the tiered pricing structure. Implementation could, but is not likely to result in changes in agricultural practices, including cropping patterns and land fallowing. It would, however, during the circumstances when tiered pricing increased rates apply, increase the cost of water, which could reduce farming revenues and decrease land values. M&I users would also be impacted by changes in water supply costs placing increased pressure on low income households.

Tiered pricing impacts would occur only when allocations are above 80 percent which occurs infrequently. Over the last few years, California has been experiencing drought and allocations were well below 80 percent. Reduced farming revenue and land values would be detrimental to farm workers, especially to migrant workers who tend to be from minority and low-income populations. However, this impact would have a low likelihood of occurring as there would not be major shifts in agricultural production in a two-year period. Any changes would likely be within the normal range of annual or seasonal variations. No disproportionate impacts to minority or low-income populations are expected.

Factors contributing to population change, employment, and income levels and unemployment rates in the affected area are closely tied to CVP water contracts through either agricultural or M&I dependence. Because no changes in water supplies or CVP operations would occur under this alternative, changes in population and the various indicators of social well-being that would result are expected to be relatively minor.

The No Action Alternative would support continued agricultural production and would not result in changes to employment of minority and low-income populations.

3.7.2.2 Proposed Action

Impacts to minority and disadvantaged populations associated with the Proposed Action would be comparable to those described under No Action Alternative. Renewal of the IRCs with only minor administrative changes to the contract provisions would not result in a change in contract water quantities or a change in water use. The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease. The Proposed Action would not disproportionately impact economically disadvantaged or minority populations. There would be no changes to existing conditions. Employment opportunities for low-income wage earners and minority population groups would be within historical conditions. Therefore, the Proposed Action would not differ from current conditions and would not be expected to disproportionately affect minority or low income populations.

3.7.2.3 Cumulative Effects

Since there would be no effect of the Proposed Action, there would be no cumulative effects to minority or disadvantaged populations.

3.8 Global Climate Change

3.8.1 Affected Environment

Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change (changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc.). (Environmental Protection Agency [EPA] 2008a)

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some greenhouse gases such as carbon dioxide occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal greenhouse gases that enter the atmosphere because of human activities are: carbon dioxide (CO_2), methane (MH_3), nitrous oxide, and fluorinated gasses (EPA 2008a).

During the past century humans have substantially added to the amount of GHG in the atmosphere by burning fossil fuels such as coal, natural gas, oil and gasoline to power our cars, factories, utilities and appliances. The added gases, primarily CO_2 and MH_3, are enhancing the natural greenhouse effect, and likely contributing to an increase in global average temperature and related climate changes. There are uncertainties associated with the science of climate change (EPA 2008b).

More than 20 million Californians rely on the SWP and CVP. Increases in air temperature may lead to changes in precipitation patterns, runoff timing and volume, sea level rise, and changes in the amount of irrigation water needed due to modified evapotranspiration rates. These changes may lead to impacts to California's water resources and project operations.

While there is general consensus in their trend, the magnitudes and onset-timing of impacts are uncertain and are scenario-dependent (Anderson et al. 2008a).

3.8.2 Environmental Consequences

3.8.2.1 No Action

The No Action Alternative is the renewal of existing IRCs as required by non-discretionary CVPIA provisions addressed in the CVPIA PEIS. The No Action Alternative would only continue, for an interim period, water deliveries that accommodate current land uses. Contract provisions under the No Action Alternative stipulate that a tiered pricing structure would be applied. Tiered pricing is mandated under the water conservation section of the CVPIA for contracts of more than three years.

Implementation of the No Action Alternative would have no change on the composition of the atmosphere and therefore would have no direct or indirect effects to climate.

3.8.2.2 Proposed Action

The Proposed Action, unlike the No Action Alternative, would not stipulate tiered pricing. Thus, renewal of the interim contracts with only minor administrative changes to the contract

provisions also have no change on the composition of the atmosphere and therefore would have no direct or indirect effects to climate.

3.8.2.3 Cumulative Effects

The Proposed Action would involve no physical changes to the environment, no construction activities, and therefore, would not impact global climate change. There would be no cumulative effects as a result of the Proposed Action.

Section 4 Consultation and Coordination

Several federal laws have directed, limited or guided the NEPA analysis and decision-making process of this EA.

4.1 Fish and Wildlife Coordination Act (16 USC § 651 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The implementation of the CVPIA, of which this action is a part, has been jointly analyzed by Reclamation and the FWS and is being jointly implemented. The Proposed Action would not involve construction projects; therefore, the FWCA does not apply.

4.2 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of the ESA requires federal agencies, in consultation with the Secretaries of Commerce and the Interior, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

The Proposed Action would support existing uses and conditions. No native lands would be converted or cultivated with CVP water. The water would be delivered to existing homes or farmlands, through existing facilities, as has been done in the past, and would not be used for land conversion.

No native lands would be converted or cultivated with CVP water. The water would be delivered to existing homes or farmlands, through existing facilities, as has been done under existing contracts, and would not be used for land conversion. Reclamation has determined that there would be no effects to species and critical habitats under the jurisdiction of National Marine Fisheries Service within the service areas for all nine contractors.

Reclamation requested consultation under section 7 of the ESA with the U.S. Fish & Wildlife Service for the Proposed Action in a memorandum dated September 15, 2009. Reclamation will not approve the Proposed Action until consultation is complete.

4.3 National Historic Preservation Act (16 USC § 470 et seq.)

Section 106 of the NHPA requires federal agencies to evaluate the effects of federal undertakings on historical, archaeological and cultural resources. Reclamation has made a determination that as the Proposed Action would result in no change in the amount of water, how the water is conveyed or applied to the ground and given the lack of any possible impacts as a result of the undertaking, Reclamation concludes that there is no potential to affect historic properties, pursuant to 36 CFR Part 800.3(a)(1). As described in the regulations, Reclamation has no further obligations under section 106.

4.4 Indian Trust Assets

ITA are legal interests in property held in trust by the United States for federally-recognized Indian tribes or individual Indians. An Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITA can include land, minerals, federally-reserved hunting and fishing rights, federally-reserved water rights, and in-stream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally-recognized Indian tribes with trust land; the United States is the trustee. By definition, ITA cannot be sold, leased, or otherwise encumbered without approval of the United States. The characterization and application of the United States trust relationship have been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions.

4.5 Migratory Bird Treaty Act (16 USC § 703 et seq.)

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior (Secretary) may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would have no effect on birds protected by the Migratory Bird Treaty Act.

4.6 Executive Order 11988 – Floodplain Management and Executive Order 11990-Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. The project would not affect either concern.

4.7 Clean Air Act (42 USC § 7506 (C))

Section 176 of the CAA requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable SIP required under Section 110 (a) of the CAA (42 USC § 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a State Implementation Plan's (SIP) purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency

and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken.

The Proposed Action analyzed is the renewal of interim contracts for the CV Contractors and does not require a conformity analysis.

4.8 Clean Water Act (16 USC § 703 et seq.)

Section 401

Section 401 of the Clean Water Act (CWA) (33 USC § 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 402 and 404 of the CWA (33 USC § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the project applicant(s). Section 401 requires any applicant for an individual U. S. Army Corps of Engineers dredge and fill discharge permit to first obtain certification from the state that the activity associated with dredging or filling will comply with applicable state effluent and water quality standards. This certification must be approved or waived prior to the issuance of a permit for dredging and filling.

No pollutants would be discharged into any navigable waters under the Proposed Action so no permits under Section 401 of the CWA are required.

Section 404

Section 404 of the CWA authorizes the U. S. Army Corps of Engineers to issue permits to regulate the discharge of “dredged or fill materials into waters of the United States” (33 USC § 1344). No activities such as dredging or filling of wetlands or surface waters would be required for implementation of the Proposed Action, therefore permits obtained in compliance with CWA section 404 are not required.

Section 5 List of Preparers and Reviewers

Patti Clinton, Natural Resources Specialist, SCCAO
Rain Healer, Natural Resources Specialist (Reviewer), SCCAO
Mike Kinsey, Supervisory Wildlife Biologist, SCCAO
Rena Ballew, Repayment Specialist, SCCAO
Barbara Hidleburg, Repayment Specialist, SCCAO
Valerie Curley, Supervisory Repayment Specialist, SCCAO
Adam Nickels, Archaeologist, MP
Patricia Rivera, Native American Affairs, MP

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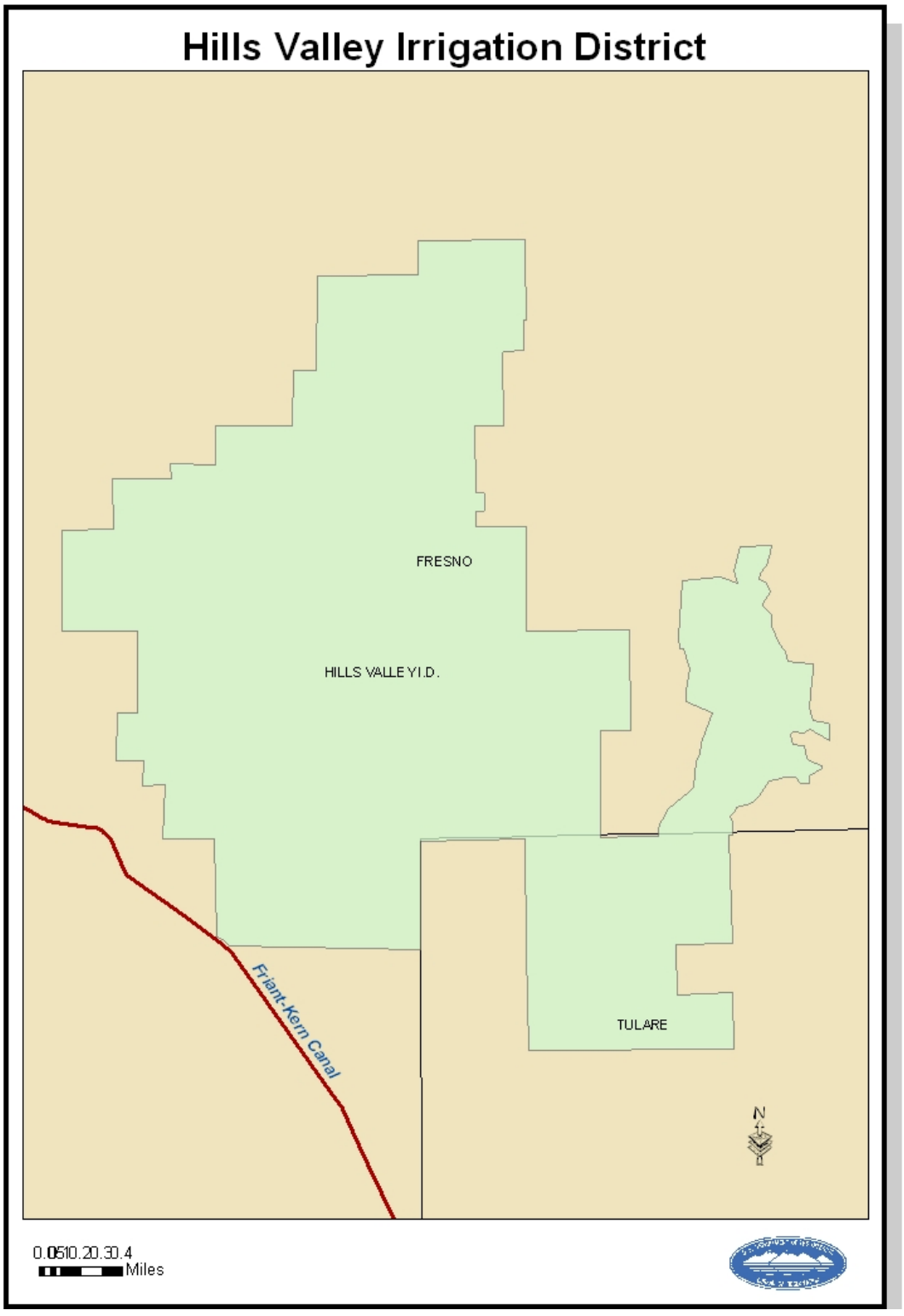
Appendix A - Individual Service Area Boundary Maps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TULARE
Friant-Kern Canal
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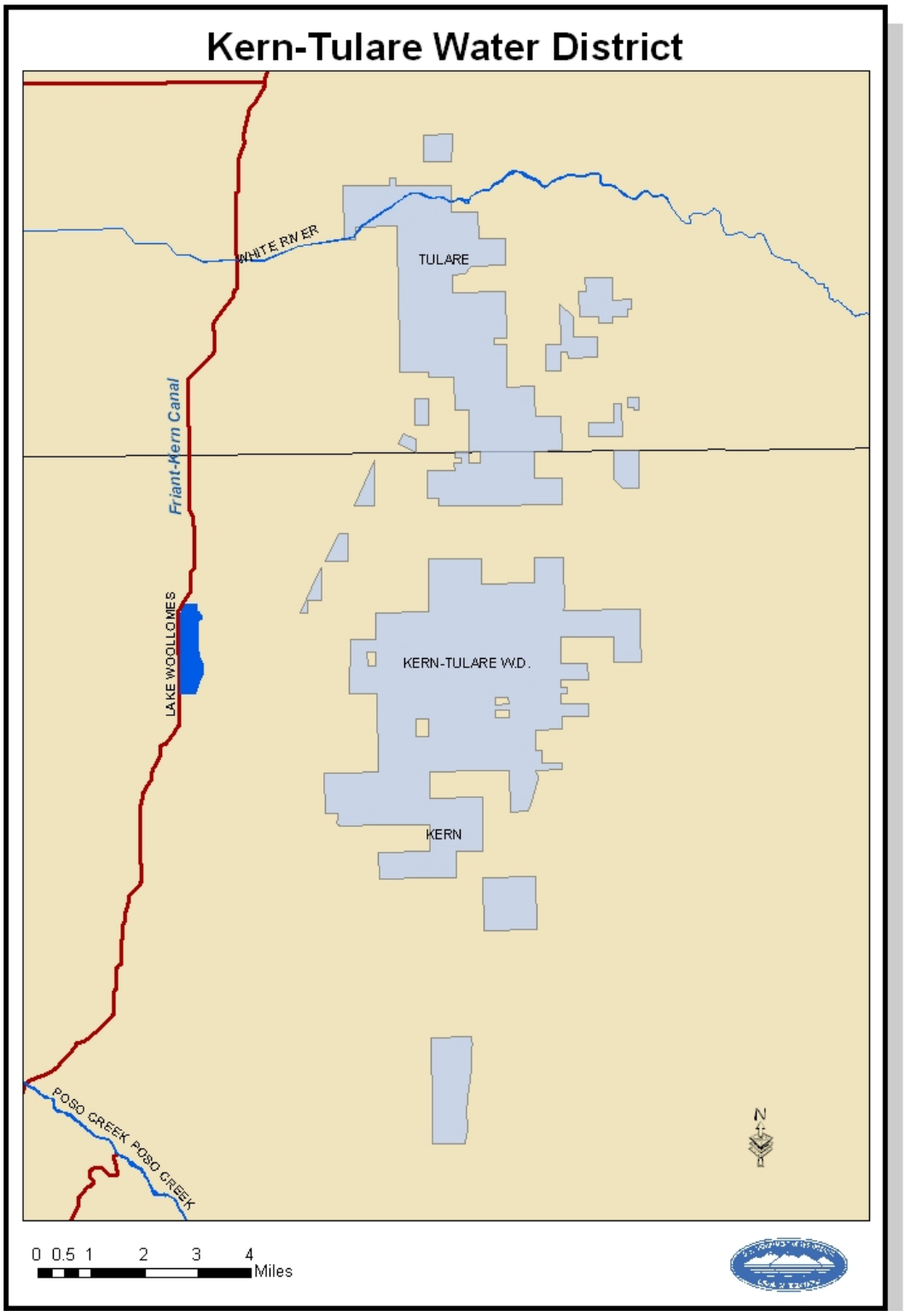
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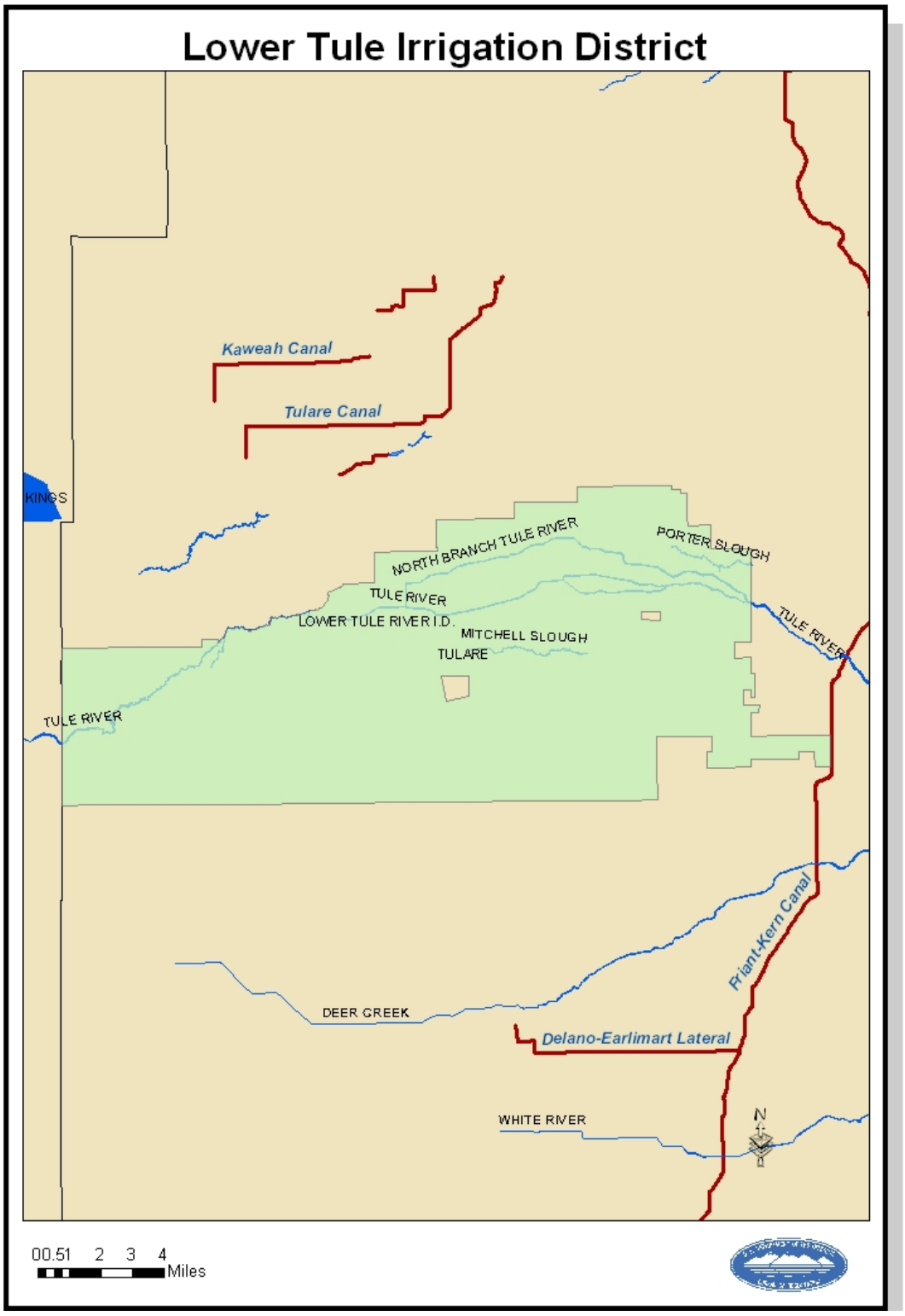
WHITE RIVER
TULARE
Friant-Kern Canal
LAKE WOOLLOMES
KERN-TULARE W.D.
KERN
POSO CREEK
POSO CREEK
N
0 0.5 1 2 3 4
Miles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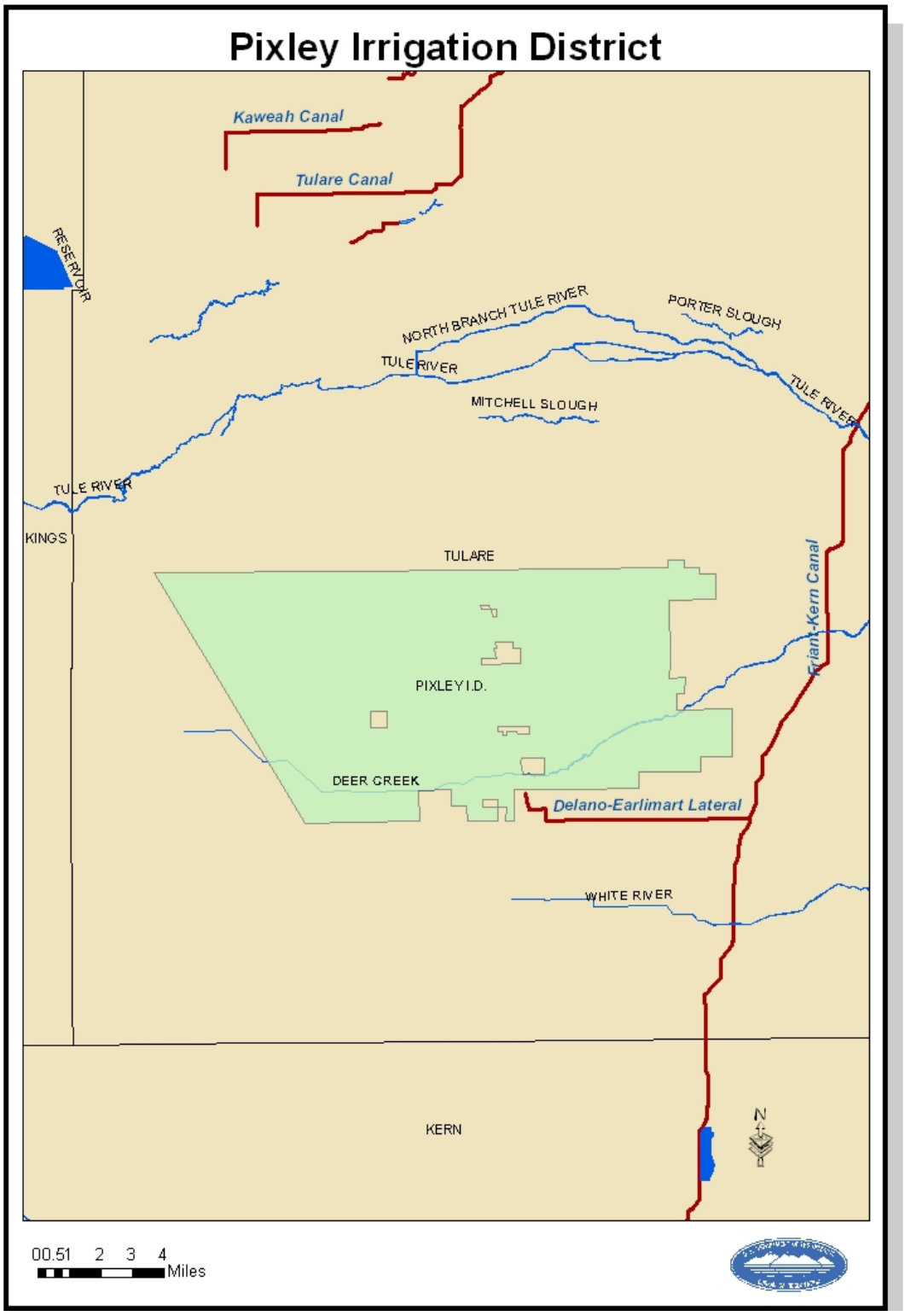
Kaweah Canal
Tulare Canal
KINGS
NORTH BRANCH TULE RIVER
PORTER SLOUGH
TULE RIVER
LOWER TULE RIVER I.D.
MITCHELL SLOUGH
TULARE
TULE RIVER
TULE RIVER
Friant-Kern Canal
DEER CREEK
Delano-Earlimart Lateral
WHITE RIVER
N
0 0.5 1 2 3 4
Miles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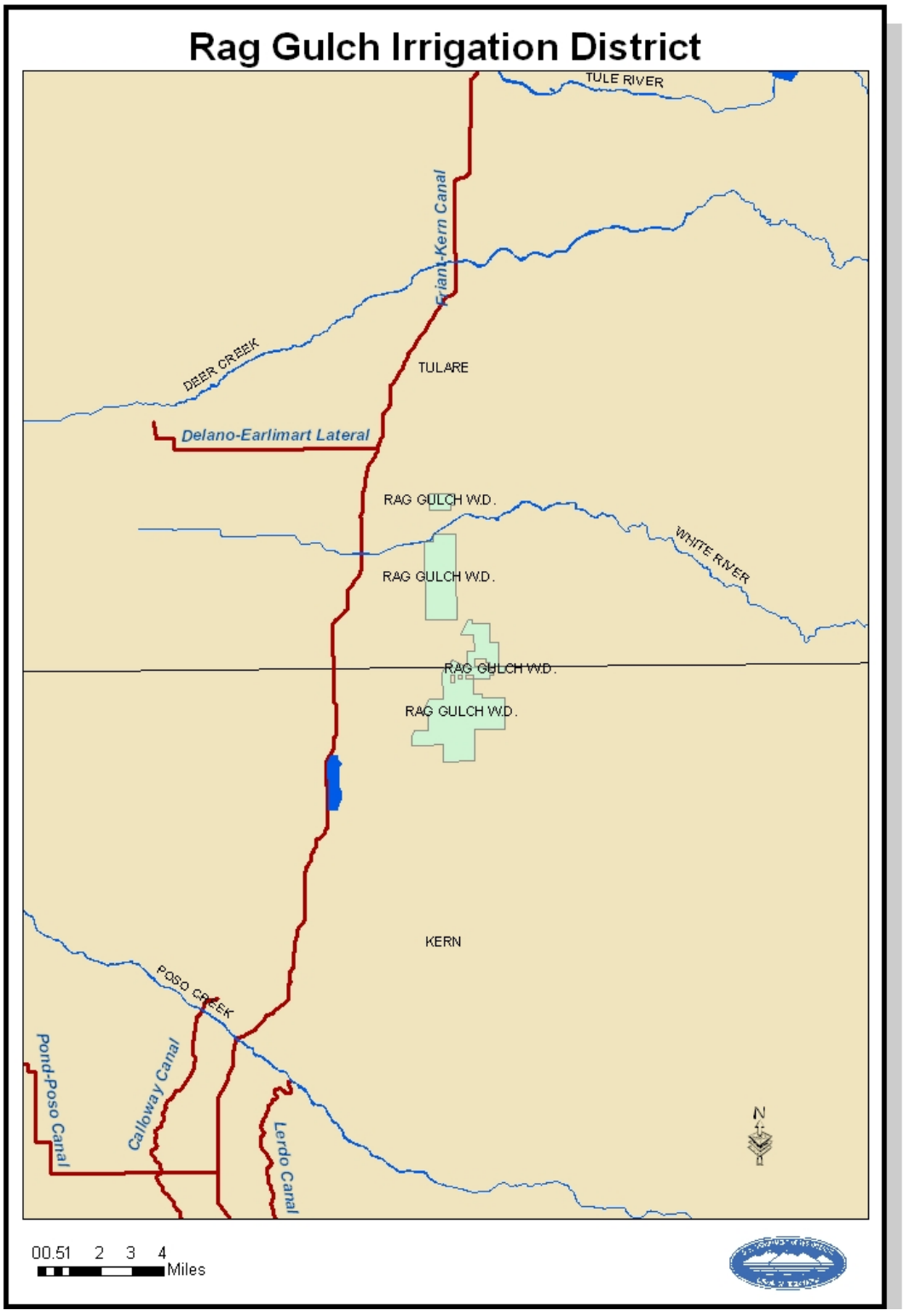
Tulare Canal
RESERVOIR
NORTH BRANCH TULE RIVER
PORTER SLOUGH
TULE RIVER
TULE RIVER
MITCHELL SLOUGH
TULE RIVER
KINGS
TULARE
Friant-Kern Canal
PIXLEY I.D.
DEER CREEK
Delano-Earlimart Lateral
WHITE RIVER
KERN
N
0 0.5 1 2 3 4
Miles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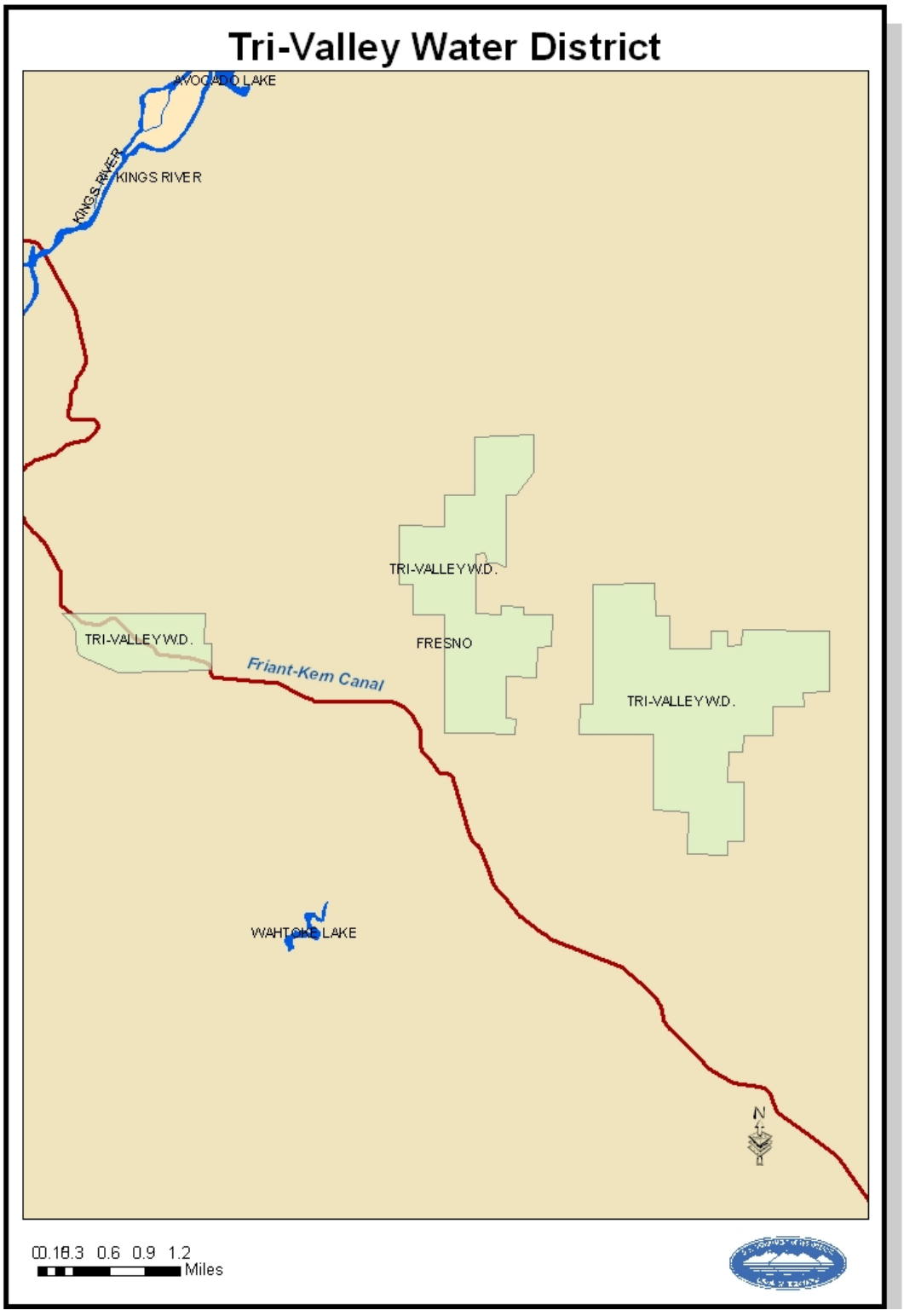
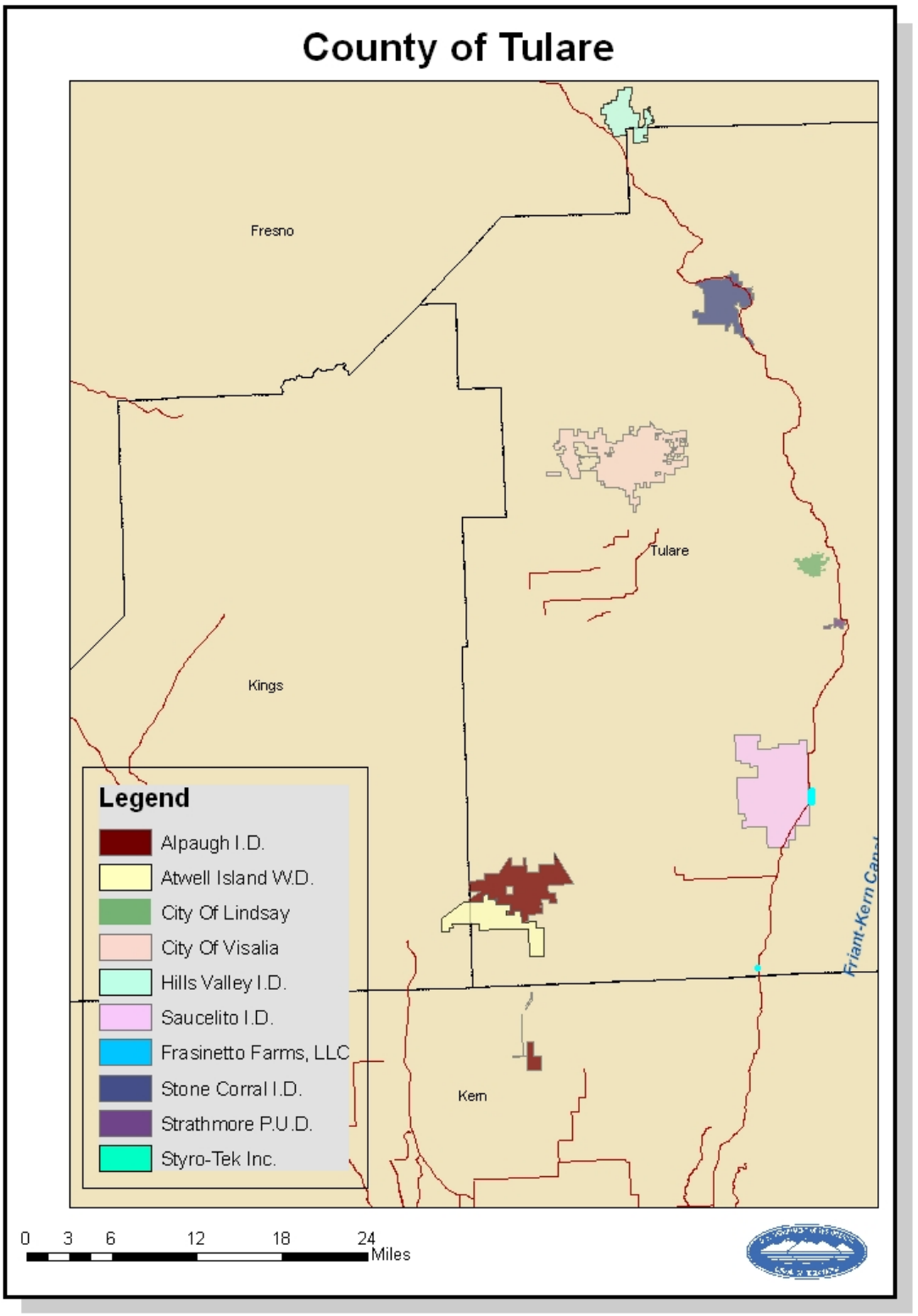
TULE RIVER
Friant-Kern Canal
DEER CREEK
TULARE
Delano-Earlimart Lateral
RAG GULCH W.D.
WHITE RIVER
RAG GULCH W.D.
RAG GULCH W.D.
RAG GULCH W.D.
KERN
POSO CREEK
Pond-Poso Canal
Calloway Canal
Lerdo Canal
N
0 0.5 1 2 3 4
Miles


Santa Clara Valley Water District
ALAMEDA
CONTRA COSTA
ARROYO VALLE
SAN JOAQUIN
ALAMEDA
ALAMEDA
SAN MATEO
ARROYO VALLE
ARROYO MOCHO
SAN MATEO
COYOTE CREEK
SANTA CLARA
ARROYO HONDO
ALAMEDA CREEK
STANISLAUS
STEVENS CREEK
STEVENS CREEK
COYOTE CREEK
GUADALUPE RIVER
SANTA CLARA VALLEY W.D.
SANTA CLARA
COYOTE CREEK
COYOTE CREEK
SANTA CRUZ
MERCED
PAJARO RIVER
SAN BENITO RIVER
SAN BENITO
TEMBLADERO SLOUGH
MONTEREY
SALINAS RIVER
N
0 1.25 2.5 5 7.5 10
Miles


Tri-Valley Water District
AVOCADO LAKE
KINGS RIVER
KINGS RIVER
TRI-VALLEY W.D.
FRESNO
TRI-VALLEY W.D.
TRI-VALLEY W.D.
Friant-Kem Canal
WAHTOKE LAKE
N
0 0.15 0.3 0.6 0.9 1.2
Miles


County of Tulare
Fresno
Tulare
Kings
Kern
Friant-Kern Canal
Legend
Alpaugh I.D.
Atwell Island W.D.
City Of Lindsay
City Of Visalia
Hills Valley I.D.
Saucelito I.D.
Frasinetto Farms, LLC
Stone Corral I.D.
Strathmore P.U.D.
Styro-Tek Inc.
0 3 6 12 18 24
Miles

Appendix B - Sample Contract

Irrigation and M&I
Contract No.
14-06-200-8292A-IR12

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
Central Valley Project, California

INTERIM RENEWAL CONTRACT AMONG THE UNITED STATES,
DEPARTMENT OF WATER RESOURCES
OF THE STATE OF CALIFORNIA,
AND
COUNTY OF FRESNO
PROVIDING FOR PROJECT WATER SERVICE

THIS CONTRACT, made this _____ day of _____, 20____, in pursuance generally of the Act of June 17, 1902 (32 Stat. 388), and acts amendatory or supplementary thereto, including, but not limited to, the acts of August 26, 1937 (50 Stat. 844), as amended and supplemented, August 4, 1939 (53 Stat. 1187), as amended and supplemented, July 2, 1956 (70 Stat. 483), June 21, 1963 (77 Stat. 68), October 12, 1982 (96 Stat. 1263), as amended, and Title XXXIV of the Act of October 30, 1992 (106 Stat. 4706), all collectively hereinafter referred to as Federal Reclamation law, among the UNITED STATES OF AMERICA, hereinafter referred to as the United States, DEPARTMENT OF WATER RESOURCES OF THE STATE OF CALIFORNIA, hereinafter referred to as DWR, and COUNTY OF FRESNO, hereinafter referred to as the Contractor, a public agency of the State of California, duly organized, existing, and acting pursuant to the laws thereof;

WITNESSETH, That:

EXPLANATORY RECITALS

WHEREAS, the United States, DWR, and the Contractor entered into an interim renewal contract identified as Contract No. 14-06-200-8292A-IR5, hereinafter referred to as the Interim Renewal Contract, which provided for the continued water service to the Contractor following expiration of Contract No. 14-06-200-8292A; and

WHEREAS, the United States, DWR, and the Contractor have entered into successive renewals of the Interim Renewal Contract, the most recent of which is Contract No. 14-06-200-8292A-IR11, hereinafter referred to as the Existing Interim Renewal Contract, from March 1, 2007, through February 29, 2008; and

WHEREAS, the United States, DWR, and the Contractor have made significant progress in their negotiations of a long-term renewal contract, believe that further negotiations on the long-term renewal contract would be beneficial, and mutually commit to continue to negotiate to seek to reach agreement, but anticipate that the environmental documentation necessary for execution of any long-term renewal contract will be delayed until March 2010 and may be delayed further for reasons beyond the control of the parties; and

WHEREAS, the Contractor has requested a subsequent interim renewal contract pursuant to Subdivision (b)(1) of Article 2 of the Interim Renewal Contract and Article 1 of the Existing Interim Renewal Contract; and

WHEREAS, the United States has determined that the Contractor has to date fulfilled all of its obligations under the Existing Interim Renewal Contract; and

WHEREAS, the United States is willing to renew the Existing Interim Renewal Contract pursuant to the terms and conditions set forth below;

NOW, THEREFORE, in consideration of the mutual and dependent covenants herein contained, it is hereby mutually agreed by the parties hereto as follows:

INCORPORATION AND REVISION OF
EXISTING INTERIM RENEWAL CONTRACT

1. The terms and conditions of the Existing Interim Renewal Contract are hereby incorporated by reference into this Contract with the same force and effect as if they were included in full text with the exception of Article 1 thereof, which is revised as follows:

(a) The first sentence in Subdivision (a) of Article 1 of the Existing Interim Renewal Contract is modified as follows: "This interim renewal contract shall be effective from March 1, 2008, and shall remain in effect through February 28, 2010, and thereafter will be renewed as described in Subdivision (a) of Article 2 of the Interim Renewal Contract, if a long-term renewal contract has not been executed with an effective commencement date of March 1, 2010."

(b) Subdivision (b) of Article 1 of the Existing Interim Renewal Contract is amended by deleting the date "February 15, 2008," and replacing same with the date "February 15, 2010."

(c) Subdivision (c) of Article 1 of the Existing Interim Renewal Contract is amended by deleting the dates "February 1, 2008," "February 15, 2008," and "February 29, 2008," and replacing same with the dates "February 1, 2010," "February 15, 2010," and "February 28, 2010," respectively.

IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the day and year first above written.

UNITED STATES OF AMERICA

By: _____
Regional Director, Mid-Pacific Region
Bureau of Reclamation

Approved as to Legal Form and Sufficiency:

_____
Chief Counsel
Department of Water Resources

DEPARTMENT OF WATER RESOURCES
OF THE STATE OF CALIFORNIA

By: _____
Director
Department of Water Resources

(SEAL)

COUNTY OF FRESNO

By: _____
Chairman, Board of Supervisors

Attest:

_____
Clerk, Board of Supervisors

By: _____
Director, Planning and Resources
Management Department

Approved as to Accounting Form:

_____
Auditor-Controller/Treasurer/
Tax Collector

Approved as to Legal Form:

By: _____
County Counsel

BUDGET UNIT NO. _____
FUND _____
SUBCLASS _____

ACCOUNT NO. _____